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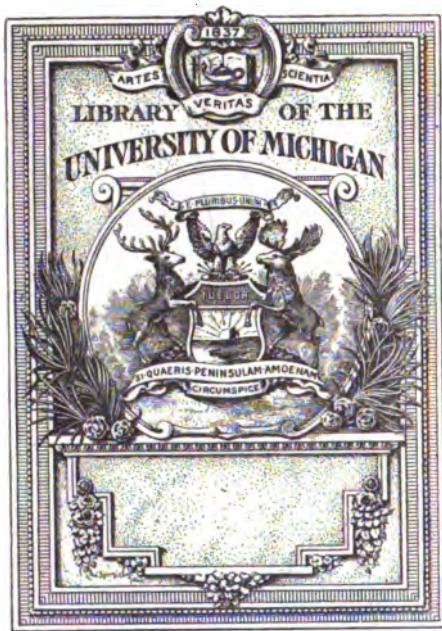

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MAN AND HIS FUTURE
THE ANGLO-SAXON, HIS PART
AND HIS PLACE

BY

L.T. COL. W. SEDGWICK



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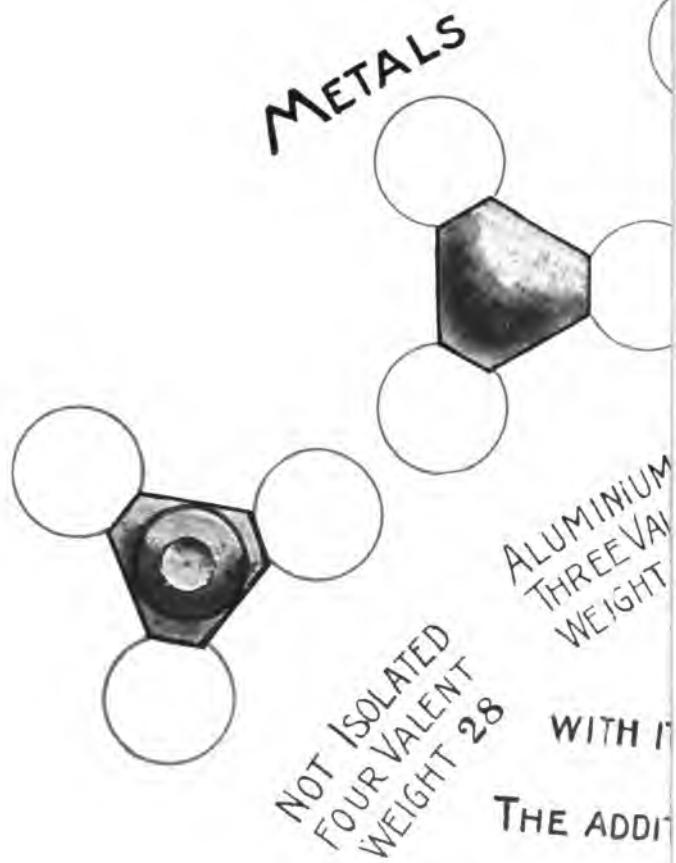
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MAN AND HIS FUTURE



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MAN AND HIS FUTURE

PART II THE ANGLO-SAXON: HIS PART AND HIS PLACE

BY
WILLIAM SEDGWICK
LIEUTENANT-COLONEL LATE ROYAL ENGINEERS
AUTHOR OF "MAN'S POSITION IN THE UNIVERSE," ETC., ETC.



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MAN AND HIS FUTURE

THE ANGLO-SAXON: HIS PART AND HIS PLACE

CHAPTER I

INTRODUCTION

IN Part I of this book, we have tried to show by the discoveries of Science that we are here on the verge of a tremendous development, and that by our knowledge and by our everyday occupations we are shown unmistakably to stand closely related to it.

Of course, Religion has by Christianity been telling us very much the same for nearly two thousand years.

It was necessary, however, to keep the two accounts quite clear and separate there, in order to bring out the validity of both. But here we want to bring the two accounts together so as to get them to support each other. Our firm belief is that by bringing the two accounts together we shall be able to get a completely rational interpretation of the Universe. In fact,

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if we are right, we shall get an interpretation of the Universe so absolutely clear as to satisfy the requirements of our knowledge and the demands of our common-sense and so full that Agnosticism and Rationalism will have or can have all their demands supplied. In this connection we are reminded of a remark which Mr Herbert Spencer made. "Be there," he said, "or be there not any other revelation, we have a veritable revelation in Science—a continuous disclosure, through the intelligence with which we are endowed, of the established order of the Universe. This disclosure it is the duty of everyone to verify as far as in him lies; and having verified, to receive with all humility" (*First Principles*, 5th edition, p. 20).

It is manifestly a strong and very confident statement, but we allege that the truth of it is only now becoming apparent. The revelation of Science could not be fully deciphered in Mr Herbert Spencer's day.

And here we are reminded of another remark which Mr Herbert Spencer made. "The disagreements between" Religion and Science, he said, "have throughout been nothing more than the consequences of their incompleteness; and, as they reach their final forms, they come into

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entire harmony" (*First Principles*, 5th edition, p. 105).

There we see that Mr Herbert Spencer recognises that Religion and Science both have revelations and that these revelations will one day be seen to be in complete agreement.

That is our own stand-point. That is where we come in declaring that the situation which these two revelations disclose to us is a very tremendous situation, and makes tremendous demands upon us. One glance at this situation as it is disclosed to us by the discoveries of Science will show us at once what a tremendous situation it is and how clearly it stands revealed.

We have tried to show in *Man's Position in the Universe*, pp. 56-65, that a form can be assigned to the atom which satisfies the requirements of our knowledge in regard to it. We are not concerned to insist that this is the only possible form which can be assigned to it. But we do insist that the fact that a real form can be assigned to the atom goes to show that the atom is a very real thing and not merely a symbol.

We have gone very fully into the case there, and it is therefore unnecessary for us to go into the facts again here. But we would point out

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that atoms, if we are right, are shown to be the building material, the bricks so to speak, with which the visible Universe has been built.

And if we recognise the atoms to be the bricks of the Universe, we cannot fail to recognise, from the beauty of many of the buildings which have been already made with them in the shape of flowers and feathers, and scales, and crystals, that they are materials with which work of exquisite beauty can be done, and thus materials of great value for building purposes.

Starting thus, with atoms as building materials of great value for building purposes, we find that the discoveries of Science show us by the Nebular Theory of Astronomy and by the Kinetic Theory of Gases that these atoms, these building materials of great value, were in the beginning by the action of energy of Repulsion all scattered throughout space and sent flying in all directions independently of each other except when actually colliding.

This scene of chaos and confusion in which, so long as it lasted, nothing useful could be done with the atoms was brought to a close by the operations of energy of Attraction.

To understand the case it is necessary, as we hold, to keep in full view the fact that atoms

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are materials of great value for building purposes, and indeed materials which have been specially fashioned and specially prepared for building purposes, as the Periodic System of Chemistry shows us.

We want to lay great stress upon the fact that the beautiful crystals and scales and feathers and flowers which are everywhere about us show clearly the great value of atoms as building materials.

If we keep this in view, and keep also in full view the fact that the atoms are shown by the Nebular Theory of Astronomy and the Kinetic Theory of Gases contributed by Physics to have been all dispersed and scattered in the wildest confusion throughout space, so that nothing useful was done with them or could possibly be done with them, we shall perceive that it was absolutely necessary to recover the atoms from the energies of Repulsion on which they were thrown away.

The recovery was made, as shown by Chemistry, Physics, and Astronomy, by energy of Attraction working on evolutionary lines. Atoms were brought together and built up in the form of molecules or groups of atoms; molecules were brought together and built up into

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masses or meteorites consisting of groups of molecules; meteorites were brought together and made up into nebulae; nebulae were condensed into solar systems in the form of groups of bodies; solar systems were brought together into a Milky Way or condensation of solar systems.

There remains one stage more, and that is, the ingathering of all the solar systems and their utilisation in the formation of a single crowning edifice.

Manifestly the last stage is a tremendous one, namely, the formation of one vast building, in the construction of which the materials in all the stars and solar systems will be used up.

This vast edifice represents an ingathering towards which all events in Inorganic Evolution are marching—atom to atom, molecule to molecule, meteorite to meteorite, body to body, system to system.

It is our belief that it is impossible for anyone who puts clearly before himself a sequence of stages or developments such as this to mistake its meaning provided that he gives it for the time his whole and undivided attention—the whole trend of it is so unmistakably clear—atom to atom, molecule to molecule, mass to mass, body to body, system to system, one stage wanting,

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and only one, the last stage. It is our belief that if the several stages are put clearly side by side in this way the tremendous significance of the situation which is opening before us cannot by any possibility be denied.

But no doubt it will be objected by some that no sequence such as this is anywhere actually discernible in the Universe and that no such sequence actually exists except on paper. No one, we believe, will attempt to deny that the various stages in the sequence are discernible; but it will be pointed out that the stages are not in sequence. In reality they are to a great extent mixed up and going on together. Beyond and besides this it will be pointed out that in addition to the series in which atom is put to atom, molecule to molecule, mass to mass, there is another series discernible in which masses are being driven apart, molecules are being disintegrated, and atoms driven apart. Thus the very buildings which are being put together stage by stage on one side are being broken down on another.

It may even be asserted that in view of such confused and contradictory results it is impossible to make anything of the situation.

Those who argue thus we would invite to come

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out with us into the harvest fields in August when the corn is being cut and carried.

We shall then be able to see, if we extend our ramble to a sufficient distance, stalks of corn being bound up into sheaves, sheaves being put together into stooks, stooks being put together into wagons, wagon-loads being put together into ricks—we shall see in fact the ears of corn being got together and brought in by stages. We shall see all the stages going on together; we shall see perhaps on one side ricks being made up from loaded wagons, on another side we shall see perhaps ears being bound up into sheaves, and again on another side we shall perhaps see stooks being loaded up into wagons, and again on another side sheaves being put together into stooks.

We shall be able to discern all the stages, but we shall not be able to discern any distinct sequence. We shall not be able to follow the same ears of corn through all the stages by which they are got in from the field to the rick.

We have got, in fact, ears of corn brought in by a regular sequence of stages, just as in Physics and Physical Chemistry we have atoms being brought in by a regular sequence of stages.

We have regular sequences in both cases, but

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in neither case have we any complete sequence anywhere discernible to the eye at any one time except when the stages are put down on paper.

The Harvest of the Universe and the Harvest of the Earth so far correspond.

But the two harvests correspond more closely than this.

For if we go into the cornfields on some bright sunny day which follows upon a rainy day, we may see sheaves being unbound and opened out, and stooks pulled down and the sheaves contained in them being spread out. We may see loaded wagons not making straight for the rick, but turning about and going in a diametrically opposite direction.

We may find therefore in the harvest field, not only mixed up stages, but also contradictory results.

If we look closely into the contradictory results connected with the Harvest of the Earth, we shall find that there is a reason for them. The farmer meets with difficulties; his sheaves get wetted, and his stooks get wetted, and he has to open them out in order to dry them. Low ground gets flooded and impassable in heavy rain, and wagons have to turn back and make detours in order to avoid such places.

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The energies of Attraction also meet with difficulties in gathering in the Harvest of the Universe. They have to encounter the resistance of the energies of Repulsion.

On the whole, the steady resistance offered by energies of Repulsion to the ingathering of the atoms is being gradually overcome, but here and there the dislodged energies of Repulsion collect together in such strength as to be able at some points to turn back the advance of the energies of Attraction.

The farmer is not always successful in getting in his crops. He sometimes loses the whole or a large part if the weather is very bad. He always loses a part and sometimes a large part by attacks of birds and rats and mice.

In spite, however, of the differences which makes one farmer late in his operations while another is early; in spite of difficulties which oblige the farmer to undo work already done and open out sheaves; in spite of losses sometimes very large, no one doubts that there is a meaning and a purpose in the harvesting operations of the Earth.

And if this is the case in connection with the harvesting operations of the Earth, there is, it seems to us, far less reason to doubt that there

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is a meaning and purpose in the harvesting operations of the Universe. For we have full before us a vast amount of ingathering accomplished in the shape of thousands of solar systems brought together in the Milky Way which, as Astronomers tell us, is a condensation of solar systems. With such a result before us, with such an ingathering coming after the complete scattering of which Astronomy in the Nebular Theory tells us, what possible grounds can there be for doubting that the ingathering will not be as complete as the scattering.

We know that the Harvest of the Earth is got in for a specific purpose. We know that the corn is got in for use.

There is one point, however, of great importance as it seems to us. The agencies by which the corn is got in, though sufficient for getting in the corn, do not suffice for turning the corn to account after it has been harvested.

The farm hands can get in the corn, but cannot turn it to full account.

The corn must be made over to the Miller to be broken up and ground into flour—the flour, the broken-up grain, must be made over to the Baker, who will put the broken parts, the flour, together afresh, and make loaves with them.

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The Harvest of the Earth has got to go to the Miller.

May it not be so also with the Harvest of the Universe? Our own experience in dealing with the Earth and with Meteorites shows us that a part, at all events, of the Harvest of the Universe will have to be broken up before the materials in it can be utilised in constructing the great central edifice

May it not be that the Harvest of the Universe has got to go to the Miller?

May it not be? Nay, is it not almost certain that the Harvest of the Universe, having been got in stage by stage like the corn into the great condensation of Solar Systems which the Milky Way presents to the Astronomers' Telescope, is now waiting for the Miller to break up the parts requiring to be broken, and for the Baker to put it together again? Such a thought as this should surely give us food for reflection, especially if it can be shown that a Miller is actually in sight.

Now Man is the Miller who deals with the Harvest of the Earth.

Man takes the corn after it has been got in by the Farmer and breaks it up into the powder which he calls flour.

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Man has therefore some skill in breaking things up.

Can it be possible then that Man is the Miller who is wanted to deal with the Harvest of the Universe?

Can it be possible that the Harvest of the Universe, this great condensation of Solar Systems which we have before us in the Milky Way, is just waiting until Man is ready to take it in hand?

Here let us pause and get into our heads one fact, and dwell upon it until we have fully grasped its meaning.

Corn is the thing harvested in the Harvests of the Earth; but atoms, the building materials of the Universe, are the things harvested in the Harvest of the Universe.

Now Man is not only hard at work in breaking up corn by putting it in his Mills, but he is also hard at work upon the atoms, upon the very things which are harvested in the Harvest of the Universe.

Man has got these very things in hand and has already learnt how to break up all the combinations of them which are accessible to him. Man takes the bodies and masses and molecules, which represent collections of atoms put to-

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gether by Evolution, and shows in Chemistry and Physics that they can be broken up into their constituent atoms, and then shows that the atoms thus recovered can be put together again and made up into new arrangements. Man can put already through his Mill all the substances which are accessible to him, can break them up and get out from them their constituent atoms. Man can then take these constituent atoms and make up with them entirely new substances. He can make, in fact, compounds which are not found in Nature. Man can, in fact, already play the part of the Miller and of the Baker in connection with the portion of the Harvest of the Universe which is within his reach.

But if it can thus be shown with certainty that Man is able to play the part of the Miller and Baker in connection with the portion of the Harvest of the Universe which is open to him, then the inference is clear that with larger powers and greater numerical strength, he will be able to deal with the entire Harvest. The conclusion is warranted that the Miller is in sight.

But it is a tremendous situation, very awful in the demands it makes and the responsibilities which attach under it to sinners and triflers such

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as we are; and yet very wonderful in its graciousness and hopefulness.

But let us not make any mistake. The Miller of the Harvest of the Universe is the Divine Man. He is the Master Who came down to this Earth to seek and to save them that were lost, and to teach and to train. Man in the person of Humanity is the Miller's servant whom the Master has chosen and taught and trained and highly favoured. Here we may point out that apart from Man, leaving Man altogether out, the situation is very much as it seemed to Mr Herbert Spencer to be. He apparently could not see that Man had any connection with the case. But he did see that Evolution points to another stage, to another tremendous stage as being due.

“When that integration everywhere in progress throughout our Solar System,” he says, as we have elsewhere shown before, “has reached its climax, there will remain to be effected the immeasurably greater integration of our Solar System, with other such systems” (*First Principles*, 5th edition, p. 586).

Thus it is quite clear that Mr Herbert Spencer saw just as plainly as we do that we are on the

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verge of a tremendous situation in the form of a coming stage in Evolution, in which all the great suns and stars will be gathered in.

But he does not seem to us to have seen that Man stood related in any way to this situation. He seems to have looked upon the situation as altogether uncontrolled. For he remarks that "if stars concentrating to a common centre of gravity eventually reach it, then the quantities of motion they have acquired must suffice to carry them away again to those remote regions whence they started. And since, by the conditions of the case, they cannot return to these remote regions in the shape of concrete masses, they must return in the shape of diffused masses" (*First Principles*, 5th edition, p. 584).

On considerations of this kind he bases the conclusion that "Apparently, the universally co-existent forces of attraction and repulsion . . . produce now an immeasurable period during which the attractive forces predominating, cause universal concentration, and then an immeasurable period during which the repulsive forces predominating, cause universal diffusion—alternate eras of Evolution and Dissolution. And thus there is suggested the conception of a past during which there have been successive evolu-

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tions analogous to that which is now going on; and a future during which other successive evolutions may go on" (*First Principles*, 5th edition, p. 587).

Now our common-sense and our everyday experience will tell us, if we give a little consideration to the matter, that the situation to which Mr Herbert Spencer's conclusions thus bring us discloses a very sorry state of things as obtaining in the Universe. Mr Herbert Spencer's alternate eras of Evolution and Dissolution represent, in fact, a situation as obtaining in the Universe which would excite our strongest reprobation, if we met with anything like it on this Earth of ours.

We cannot imagine that any Farmer on this Earth would allow his men and carts to carry off the corn from his ricks and scatter it all over the fields again in order to have another harvest over one and the same crop after they had once got it all in safely. There would be no bounds to our indignation if we did find anything of the sort going on. The same men and carts would be able, of course, to carry off the corn and scatter it again after bringing it in if they were allowed. But we know they would not

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be allowed to do anything of the kind on the face of this Earth of ours.

Yet in the Universe at large, if Mr Herbert Spencer is right, this is the very kind of thing which has been going on for ages—alternate eras of Evolution and Dissolution.

In fact, our everyday experience teaches us that alternate eras of Evolution and Dissolution are only possible in the absence of a Master. If a Master is brought in, there will be an end to them speedily.

We are driven to the conclusion, therefore, that Mr Herbert Spencer's Philosophy requires to be supplemented by bringing in a Master, and that it was a fatal mistake on his part to omit the Master.

For our part we think that Mr Herbert Spencer came very nearly to the same conclusion himself in the end. In support of this view we may point to the stray remarks which he made from time to time, and which seem to us to show that at an early stage he began to have misgivings about his Philosophy and to betray signs of an inclination towards Religion.

He tells us, for example, that "this necessity we are under to think of the external energy in terms of the internal energy, gives rather a spir-

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itualistic than a materialistic view of the Universe" (*Principles of Sociology*, vol. iii. p. 178). In another of these stray remarks he tells us that "we cannot decide between the alternative suppositions, that phenomena are due to the variously-conditioned workings of a single force and that they are due to the conflict of two forces" (*First Principles*, 5th edition, p. 228).

Now since he had previously told us that "we are obliged to regard every phenomenon as a manifestation of some Power by which we are acted upon" (*Ibid.* p. 99) it is quite plain that "phenomena due . . . to a conflict of two forces" bring us straight to a conflict of two Powers. This is placed beyond doubt by the fact that he goes on to tell us that a "Power . . . works in us certain effects . . . the most general of which we class together under the names of Matter, Motion and Force" (*Ibid.* p. 557).

We gather, therefore, from Mr Herbert Spencer that it is not impossible to find scientific foundations for the belief of the early Christians in a conflict of the two Powers—Christ and Satan.

In another stray remark he deals, as we hold, more clearly with this belief and shows us that

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it has good scientific foundations. "With the conception," he says, in reference to the harm and suffering caused by Parasites, "of two antagonist powers which severally work good and evil in the world, the facts are congruous enough. But with the conception of a supreme beneficence this gratuitous infliction of pain is absolutely incompatible" (*Principles of Biology*, revised edition, vol. i. p. 429). He gives us here, as we hold, an actual glimpse of the two Masters, Christ and Satan, of the early Christian Church.

Mr Herbert Spencer, as we hold, gives us in these stray remarks plain indications of a change in his views in regard to Religion and by implication in regard to Science also. In these remarks we find, as we hold, Mr Herbert Spencer beginning to change his views.

In his Autobiography we find, as we hold, Mr Herbert Spencer acknowledging that in the end he came to change his views completely: "Thus," he tells us, "religious creeds, which in one way or other occupy the sphere which rational interpretation seeks to occupy and fails, and fails the more the more it seeks, I have come to regard with a sympathy based on community of need: feeling that dissent from them results

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from inability to accept the solutions offered, joined with the wish that solutions could be found" (vol. ii. p. 471).

Reading this passage by the light of the stray remarks we have referred to above, we gather that Mr Herbert Spencer came in the end to renounce as doomed to hopeless failure all attempts to arrive at a rational interpretation of the Universe, apart from Religion, but was not altogether without hope that with the help of Religion a rational interpretation might be found. We may perhaps with advantage give another passage from the Autobiography which throws light on the whole case and goes to show that our diagnosis is correct: "Thus I have come," says Mr Herbert Spencer, "more and more to look calmly on forms of religious belief to which I had, in earlier days a pronounced aversion" (vol. ii. p. 468).

As far as our knowledge goes, no one before ever made such an earnest attempt to arrive at a rational explanation of the Universe apart from Religion as Mr Herbert Spencer made. His opinion therefore seems to us to be of great value.

The question here arises—Is Mr Herbert Spencer's Philosophy then a complete failure?

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Our answer to that question is, Mr Herbert Spencer's Philosophy is a complete failure if it is pitted against the explanation which Religion gives us and is, as we hold, recognized to be such by Mr Herbert Spencer himself in one of the passages quoted above.

But if instead of being pitted against Religion it is employed to support Religion, then it can be demonstrated to be a great success.

For it can, as we hold, be shown that the teaching of the Bible and in particular the teaching of the Master Christ as set forth by Himself in the Gospels and by His followers in the Acts and Epistles, when it is read by the light Mr Herbert Spencer's Philosophy throws upon it, gives us an entirely rational explanation and in fact the only rational explanation that can be obtained.

This is why we hold, as stated at p. 26, that it was a fatal mistake on Mr Herbert Spencer's part to lose sight of the Master. This is the view we intend to develop in this book with the case of the Anglo-Saxon before us.

We find, for our part, that when the Master is brought in, it is easy to discern what his plan is for dealing with the case.

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He is training Man to use Machinery and by it to learn how to take control of the energies of Repulsion and employ them to transport the atoms to places where they are wanted for building purposes, and prevent them thus from wildly scattering the atoms as they would do if they were not under control.

CHAPTER II

EVOLUTION

THE information which Evolution supplies is of such importance to us that we feel obliged to look into it more closely in order to reassure ourselves before proceeding further. It tells us assuredly of another and better world. We suppose that no one who looks carefully into it will fail to see that such a series as that of atom to atom to form molecules, molecule to molecule to form masses or meteorites, meteorite to meteorite to form solar systems, points logically to another term, namely, solar system to solar system to form one vast edifice—a new world.

We suppose that everyone will admit this with the Harvests of the Earth before us with their corresponding series, stalk to stalk to form sheaves, sheaf to sheaf to form stooks, stook to stook to form wagon-loads, wagon-load to wagon-load to form a rick.

We suppose that everyone who looks closely into the matter will admit that Science tells us through Evolution of another world just as unmistakably as Religion does. At the same time

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it will be no doubt objected by many that Darwinism has shown that the Master is very far off, so very far, in fact, as to be absolutely undiscernible and unknowable by us; and thus has exploded the belief of Religion that we have the Master's own authority for holding that we belong to another world, and that a better world than this will be open to us if we prepare for it. Let us see then what Darwinism really shows us. In the first place, we note that in Darwinism Man only appears as a wild anthropoid ape; and that the Darwinian explanation breaks down if Civilised Man is brought in. Therefore we conclude that Darwinism does not relate primarily to the present age in which Civilised Man is swarming upon the face of the Earth, but relates primarily to an earlier age.

When we look closer, we see that the case is necessarily so. For in Man's plantations and with Man's crops, trees and plants are put out at regular intervals and weeded and thinned from time to time if necessary; also insect pests and fungus pests are kept down, and destructive wild animals kept out. Each tree or plant has the full amount of room it requires for expansion and full freedom to expand under Man's supervision and protection.

There is no struggle for existence discernible.

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The plants and the trees live a life of dependence. They are dependent upon Man's care and protection. The weeds from time to time assert that, with their advantages, they are on Darwinian principles the proper occupants of the soil, and proceed to choke Man's crops. They are ruthlessly hoed up or cut down and made to furnish manure for Man's nurslings, which on Darwinian principles they would have supplanted.

Again in Man's clearances the herds and flocks are limited to the number of heads the land will carry. They are protected by Man against wild animals and against disease.

The herds and the flocks live a life of dependence. They are dependent upon a Master's care and protection. Man with his herds and his flocks is to-day swarming upon the Earth and covering its surface with his plantations, farms, cattle-runs, and towns. The wild things have no freedom to develop on Darwinian principles.

Natural Selection, so far at all events as large forms of life are concerned, is a thing of the past. It is Man's Selection which is operative now.

Darwinism is thus shown to relate primarily to an earlier age, to relate to the dim past before

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Man began to overspread the Earth and interfere with the course of Nature. Organic Evolution allowed great freedom to the forms which enjoyed an advantage in the struggle for existence. To-day, in spite of all their advantages, these forms are cut down and made to furnish food supplies for forms which, if unprotected, would be helplessly crowded out. Darwinism shows us freedom and not dependence, shows us the Master as very far off, hardly discernible at all. If we take Darwin's own presentation of Natural Selection, when he tells us: "I believe that animals have descended from at most only four or five progenitors, and plants from an equal or lesser number" (*Origin of Species*, 1st edition, p. 484); and when he further says that: "There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one" (*Origin of Species*, 6th edition, p. 429); if we take Natural Selection when presented thus by Darwin we perceive that we are shown, first of all, the Master as having been at one time actually at work in the World, as having been actually at one time engaged in creating forms of life; we perceive also that we are shown Natural Selection as taking up the work of Creation at

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the point where it was laid down by the Creator. We are shown Natural Selection as taking up the work of Creation and carrying it on in the absence of the Creator.

If we turn now to the account of Creation which the Bible gives us, we perceive that we are shown the Master as having been engaged for two days (the fifth and the sixth days) in creating forms of life in the world, and then laying down the work of Creation and resting.

We are told that "on the seventh day God ended His work which He had made; and He rested on the seventh day from all His work which He had made.

"And God blessed the seventh day, and sanctified it: because that in it He had rested from all His work which God created and made" (*Genesis* ii. verses 2 and 8).

Thus we see that Darwinism comes in and takes up the work of Creation on the seventh day, at the point where it was laid down by the Master. Darwinism comes in and takes up the work of Creation on the seventh day, and carries it on by Natural Selection in the absence of the Master.

We see thus that Darwinism, as Darwin presented it, gives us a clear explanation of a very

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difficult passage in the history of Creation as it is given to us in the Bible.

We are told repeatedly in the Bible that God rested on the seventh day, but this seems, at first sight, to give such a very anthropomorphic tone to the narrative that it was difficult to accept it as a real account, until Darwinism came in and cleared up the case by showing that the narrative in the Bible gives, in homely language, a correct account of what happened, and by showing that Natural Selection came in and took up the work of Creation when the Master laid it down—took up the work and subsequently carried it on in the absence of the Master.

It is necessary to remember that it was in the heat of controversy that men in the last century imagined that because Darwinism could show that Nature was able for a time to get on without a Master, therefore Darwinism, with the help of Mr Herbert Spencer's successive eras of Evolution and Dissolution, showed also that Nature could get on without a Master always, and thus exploded the Doctrines of Religion in regard to the presence and operations of a Master. There is no controversy now to blind our eyes. We can see now that Darwinism offers no complete or even approximately

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complete explanation of the present time when Nature has lost its freedom and a Master is very much in evidence.

We can see that Darwinism and Christianity belong to different ages.

Darwinism, dealing as it does with the Origin of Species, relates to the dawn of Life and to the dim past before Man overspread the Earth; Christianity relates to the present, when Man is swarming upon the face of the Earth.

Darwinism does not refute the teaching of Christianity, neither does Christianity refute the teaching of Darwinism. We hold that both are sound explanations, even though nowadays Science has grave doubts about Natural Selection. For our part, we hold that it is vain to attempt to verify by facts in the present day the Darwinian teaching in regard to Natural Selection, for the simple reason that to-day Natural Selection is not allowed fair play. Men, with their domesticated animals and cultivated trees and plants, have altered the environment of every living thing, and thrown all Nature out of gear, leaving it no room for working. The freedom of Natural Selection is quite gone.

If we now take another of Darwin's presentations of Natural Selection, when he says: "The

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principle of Natural Selection may be looked at as a mere hypothesis, but rendered in some degree probable by what we positively know of the variability of organised beings in a state of nature—by what we positively know of the struggle for existence, and the consequent almost inevitable preservation of favourable variations—and from the analogical formation of domestic races" (*The Variation of Animals and Plants under Domestication*, popular edition, p. 10); if we take this presentation, we gather from Darwin himself that the existence of Natural Selection in the present day cannot be demonstrated in the same way and with the same certainty as the existence of Human Selection can be demonstrated. We gather, in fact, that the present existence of Natural Selection can only be inferred partly from the demonstrable existence of Human Selection and partly from other positively known facts in regard to a struggle for existence, and in regard to variability.

We conclude, therefore, that Natural Selection, though all efficient at the dawn of life, is not in the same position to-day, but in quite a different position; is, in fact, in quite a subordinate position. We gather that this is the day

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of Human Selection and is not the day of Natural Selection.

Darwinism tells us of a day when the Master was far away, so very far as to be almost indistinguishable; Christianity tells us of a day when He was very near, nearer than He is at present, though only as a Teacher and Trainer of Men, in a humble position. Science to-day shows us that He is again coming near—coming this time not to plead, not to teach, not in humility, but coming as a King heralded by all the hosts of Tame Life—tamed men, tamed animals, tamed birds—which are overspreading the Earth and sweeping away the hosts of Wild Life—wild men, wild animals and wild birds—which walk in their own ways and acknowledge no master.

This, we hold, is what Science is showing, this is what Religion tells us.

Darwinism has not exploded or even touched the Doctrines of Christianity. The Master Himself spoke often to His followers of going away. “It is,” He said, “expedient for you that I go away” (*John xvi. 7*). He said also, “A certain man planted a vineyard, and let it forth to husbandmen, and went into a far country for a long time” (*Luke xx. 9*). Again He said, “For the kingdom of heaven is as a man

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travelling into a far country *who* called his own servants, and delivered unto them his goods . . . and straightway took his journey" (*Matthew* xxv. 14).

Again He said, "*The Son of Man is* as a man taking a far journey, who left his house, and gave authority to his servants" (*Mark* xiii. 84).

There is nothing therefore surprising in the mere fact that Darwinism should show us the house without a Master.

What is really startling is to find that, while Darwinism shows us the world completely given over to Wild life, Science should show us to-day the larger forms of Wild life given over to destruction displaced by swarms of Men who are rapidly covering the face of the Earth in its habitable parts by farms, cattle-runs, plantations, and towns.

If we think at all over the meaning of these incoming swarms of Men and of the vanishing herds of wild animals, we shall not fail to see that the need of the Universe to-day is a need of swarms of Men.

CHAPTER III

MAN

To-DAY the spectacle before us is that of Man swarming upon the Earth and overspreading it.

The beautiful Wild life by which the Earth was before overspread, the noble forests, the graceful, agile wild animals, the lovely birds are vanishing and giving place to Man's food crops and pruned fruit trees and to his slow ungainly herds and flocks.

Tame life, life under a master, is overspreading the Earth and displacing Wild life.

But there is a notable difference between the two forms of life besides the great fact that Tame life represents the ascendancy of a Master, while Wild life shows the Master away, shows the Master far away, and Natural Selection and thus Darwinism in full force.

There is this notable difference. The wild things obediently adapted themselves to their environment, dropping out from the struggle for existence if they failed, while Man disobediently sets to work to adapt his environment to himself, to his needs, and to the needs of his herds and flocks.

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Man has altered, or is rapidly altering, the whole face of the habitable parts of the Earth in connection with his needs.

Science shows us that Man by nature is closely allied to the anthropoid apes, and is, in fact, an anthropoid ape of some kind. It also shows us that the anthropoid apes are strictly limited in their range to the equatorial or tropical regions, while Man is overspreading the whole land surface of the Earth, with the exception of the mountains and the polar regions.

At the same time, it is plain that Man could not live at all in the inclement climates which prevail in the regions into which he has wandered, without destroying the forests in order to provide timber for the erection of shelters and to provide fuel for fires to warm his body and cook his food and prepare his weapons and tools, and in order to provide clear spaces for growing food crops.

With his shelters in the form of towns, with his plantations and his fields, and with his fires, **Man has rebelliously altered the whole face of Nature.**

Besides this, **Man has rebelliously transformed himself into a carnivorous animal.** With rounded jaws and an even set of teeth, and with weak

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nails, and thus without fangs or claws, Man has no warrant from Nature to take life. Besides this, we find that Man has got the large intestine of herbivorous animals. Professor Elie Metchnikoff tells us that, although a large intestine is “useless in the digestion of animal food, it has an undisputed importance in the digestion of vegetable matter. It has a very large calibre in herbivorous creatures” (*The Nature of Man*, translation, edited by P. Chalmers Mitchell, p. 71). Then he tells us that “the human race has inherited from its ancestors an enormous large intestine” (*Ibid.* p. 258).

Hence, Man, with his “enormous large intestine” is shown to be by Nature an herbivorous animal, or, rather, a fruit and root eating animal, as the wide palms of his hands testify.

Hence, Man has taken on himself the rôle of a carnivorous animal in blood-thirstiness and in rebellion.

In eating flesh and in cooking it by fires in which the products of Evolution—the wood and the coal—are burnt up and dissipated after the carbonaceous and other matter of which they consist had been carefully gathered in by plant life, for the most part from the atmosphere, and put away in the form of growing trees or in the

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form of buried trees in coal beds, Man shows himself to be a blood-thirsty rebel in his eating.

Thus Man in the world of Nature stands out as a rebel. In this connection it is important to remember that Sir Ray Lankester has very clearly pointed out that Man is a rebel. "The standard raised by the rebel Man," says Sir Ray Lankester, "is not that of 'fitness' to the conditions proffered by extra-human nature, but is one of an ideal comfort, prosperity, and conscious joy in life—imposed by the will of man and involving a control and in important respects a subversion of what were Nature's methods of dealing with life before she had produced her insurgent son" (*The Kingdom of Man*, p. 28).

"This," he says also, "is indeed, the definite purpose of my discourse; to point out that civilised man has proceeded so far in his interference with extra-human nature, has produced for himself and the living organism associated with him such a special state of things by his rebellion against natural selection and his defiance of Nature's pre-human dispositions, that he must either go on . . . or perish miserably . . ." (*Ibid.* p. 31).

Thus civilised Man is clearly shown to be a rebel.

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Destroying, as he does, the forests and the wild animals and birds and fish, the products of Evolution, Man is on the side of the Master who works through energies of Repulsion to break up and destroy the work of Evolution. Man is on the side of Dissolution, to use Mr Herbert Spencer's term when he says, "the processes thus everywhere in antagonism, and everywhere gaining now a temporary and now a permanent triumph, the one over the other, we call Evolution and Dissolution" (*First Principles*, 5th edition, p. 285).

Well, here we see Dissolution triumphing. It has got Man in rebellion, rebelliously carrying fire and sword through the products of Evolution—the wild things of the Earth.

Thus Science shows us Man in rebellion, rebelliously eating, rebelliously destroying.

We notice that this is the view which Religion gives us in the Bible when it shows Adam and Eve eating in rebellion, and through them Man gone over to the side of the Evil One and become a rebel.

Religion and Science both give us the same view of Man—show us Man as a rebel.

Religion tells us that Man is under a burden of Original Sin.

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Science shows us that Man's Original Sin is the sin of rebellion.

Sir Ray Lankester in showing us Man as a rebel, as we have seen above, goes on to point out that "no retreat is possible" (*The Kingdom of Man*, p. 32).

Thus Man is shown both by Religion and Science to be a hopeless, helpless rebel.

Now how do we ourselves deal with rebellion?

We do not deal lightly with rebellion. We put the leader or head to death and then we pardon his followers if they submit and lay down their arms. The blood of the leader atones for the rebellion of his followers. But religion tells us that this is exactly the way in which Man's rebellion has been dealt with. It tells us that our proper Master and Lord came down from Heaven to help us. The Lord Jesus came and took our nature and our rebellion upon Himself, and thus became our Leader and Head. "Ye call me Master and Lord: and ye say well; for so I am" (*John* xiii. 18).

And then as our Leader He suffered the penalty of rebellion, the death penalty.

Religion adds that our Master's blood thus shed, the blood of our Leader, is a sufficient

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atonement for all our sins if we plead it submissively, if we lay down our arms.

Thus we see that Religion shows us that our rebellion has been dealt with in exactly the same way as that in which we deal with rebellion amongst ourselves.

Science thus shows us that Christ's atonement is a rational transaction, a transaction strictly in accordance with our own procedure and practice, when we put the leader of a rebellion to death and then pardon his followers when they submit and lay down their arms.

Science, in this way, shows that the blood of Christ is precious for rebels such as we are.

We notice that Christ makes no appeal to our emotions or to the sentimental side of us. "Daughters of Jerusalem," He said on the way to the place of crucifixion, "weep not for Me, but weep for yourselves and for your children" (*Luke xxiii. 28*). He does not ask for pity. He does not think of Himself even in that dread hour, with the place of crucifixion full in view. His appeal is addressed to our common-sense as hard-headed Men.

We are rebels and cannot go back or escape.

Sir Ray Lankester has pointed out, as we have seen already at p. 45, that "Man has proceeded

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so far . . . has produced for himself . . . such a special state of things by his rebellion against natural selection and his defiance of Nature's pre-human dispositions, that he must either go on . . . or perish miserably. . . ." (*The Kingdom of Man*, p. 81).

Christ, when He said to the women, "Weep for yourselves," bade them in effect to lay aside sentimentality and to look into their own case. He sees men perishing miserably. "Then shall they begin to say," He adds, "to the mountains, Fall on us; and to the hills, Cover us" (*Luke xxiii. 30*), because they would not open their eyes and look fully into their own case, but wilfully closed their eyes to the evidence He put before them. It is our day now, and we are called upon to open our eyes. We must look into the case as hard-headed practical Men. We must go on with our rebellion, and with Christ as our Leader and as our Head carry our rebellion up to Heaven and there plead Christ's death as our Leader, plead Christ's Atonement. We cannot escape from our rebellion here, we cannot lay down our arms and submit here, but we can lay down our arms and submit there. We cannot fully return to the side of Evolution here. But we can return to it in the next stage, when the

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flesh and its wants have been laid aside. In the next world, in the world to come, we can be wholly on the side of Evolution.

We can here and now prepare for that day. We can get ready for it. We can train ourselves for it by Christ's help. We can be His people here, for He knows our infirmities and our weakness.

CHAPTER IV

THE ANGLO-SAXON

If we proceed to enquire from Science whether the stupendous act of reconciliation dealt with in the last chapter has brought about any change in Man's status commensurate at all with the magnitude of the operations involved in it, we shall not fail to notice that a great change has come over Man.

We notice that while Creation shows us the Master at work, and Darwinism shows us the Master away, so far away indeed as to be almost indiscernible and Nature left to itself to develop, Christianity shows us the Master at work again, teaching and training a band of Men and then going away again and leaving this band of Men to develop.

The first Creation developed a Wild life which covered the Earth, overspreading it with swarms of wild things. And now the second Creation has developed and is overspreading the Earth with a different kind of life, namely, Tame life, and destroying all the wild things except such as fall in with the new arrangements and are allowed to live on sufferance.

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Man is to-day swarming upon the Earth and with his tame things—his herds, and flocks, and fruit, and timber trees, and cereals—is occupying every habitable part of it and destroying the wild things which developed on Darwinian principles. Man is not overspreading the Earth to-day as a product of Darwinism, that is to say as a wild anthropoid ape, but as a civilised man with Machines in the shape of Locomotives, Steamships and other Machines, and thus as a man of the Anglo-Saxon type, the inventor of these Machines and a product of Christianity.

We notice that the Anglo-Saxon with his Machines is altogether a different form of man to any form of man which preceded him.

We notice also that all civilised peoples are taking to the use of Machines, and not only taking to the use of Machines but also are taking or trying to take the Anglo-Saxon Constitution in some form or other.

Thus we see that all civilised nations are taking to Anglo-Saxon ways.

Thus we see that the Earth is being overspread by men of the Anglo-Saxon type.

If we look at the Machines which the Anglo-Saxon uses we perceive that the vast majority are driven by steam or by the explosion of gases,

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although a considerable number are worked by water power or by electricity.

Heat, as we learn from Science, is a form of energy of Repulsion by which Matter is scattered and Dissolution is brought about, in opposition to energy of Attraction by which matter is ingathered and Evolution is brought about.

In steam machinery and in gas engines the scattering and dispersing action of heat, under which it tends to expand substances by driving the molecules of which they are made up apart, is taken advantage of.

Substances with molecules which can easily be driven apart and set in motion are used. Steam, which is one of the substances used, is produced under confinement and conducted by pipes to cylinders fitted with movable pistons. The steam, when admitted into the cylinder behind the piston, drives the piston along the cylinder until the steam finds an opening to escape at the end of the cylinder where it leaves the piston. A flow of steam is then admitted to the cylinder behind the piston in its new position, and the piston thus driven back to its original position.

Thus the piston is driven backwards and forwards in the cylinder by the escaping steam or gas. The moving piston has a jointed rod at-

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tached to it, and by its jointed rod turns a wheel or a pair of wheels with a cranked axle, or turns the screw of a steamship.

The result is that energy of Repulsion, of which heat is a form, can be employed to bring, by means of Locomotives or Steamships, building materials together at the site of some building which Man is erecting or about to erect.

We are so used to seeing Trains running and Steamships plying that we hardly notice them at all when they go past us. We are so used to seeing them that we do not think about them at all. Their importance is altogether overlooked.

But if we do give a thought to the matter we shall perceive at once that a Locomotive bringing a trainload of building materials to the site of some building is a phenomenon of tremendous importance with tremendous possibilities at the back of it.

Here we have energy of Repulsion, which is everywhere engaged in scattering Matter, and which once, as the Nebular Theory of Astronomy tells us, scattered the entire stock of Matter in the Universe in confusion throughout Space and, according to Mr Herbert Spencer's Philosophy, is going to undo the work of Evolution and scat-

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ter Matter again. Here we have this wild scattering agency engaged under Man's control in bringing Matter together. Here we have this wild scattering agency obediently working under Man's control and engaged in collecting materials and bringing them together.

The point we wish to make is that this is only a beginning, but a beginning which has at the back of it tremendous possibilities if Man is given larger powers.

It is written "the God of peace shall bruise Satan under your feet shortly" (*Romans* xvi. 20). Well, here we may see the beginning of the fulfilment of that promise. Here also we may see the beginning of the fulfilment of the word spoken to Satan in regard to the seed of the woman that "it shall bruise thy head, and thou shalt bruise his heel" (*Genesis* iii. 15).

Here we have a part, even though it be only a very minute part, of Satan's wildly scattering and dividing hosts of energies of Repulsion by which the great Divider works out Dissolution and opposes and undoes the evolutionary work of the energies of Attraction; here we have a part of Satan's hosts by which He is engaged in working out Dissolution in opposition to Evolution and in dividing and scattering things

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on every side throughout the Universe captured and compelled to work for a moment on the side of Evolution in collecting materials and bringing them together in a very small way indeed, but still in a real way admitting of subsequent extension on a vast scale. In comparison with the great movements on foot in the Universe, this move by which Christ gets, through the Anglo-Saxon with his machinery, control for a moment over a part of Satan's wild hosts of energies of Repulsion, is a very small one, but small as it is it cannot be turned back or even adequately met. It represents a deadly blow at Satan's headship over Dissolution and over the wild energies of Repulsion by which Dissolution is worked out.

Here we see a blow delivered straight at the head, and a telling blow, an earnest, as we take it, of more blows to follow.

And Satan, as we notice, has returned blow for blow. On getting this blow, did he not straightway return it by getting Men to imagine that with Evolution and with this knowledge of theirs they were so strong that they could do without Christ, and thus turning them away from Christ? Has there not been a great fall-

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ing away from Christ under Evolution and is not that a heavy blow against Christ's Kingdom?

Satan received through Man, in the person of the Anglo-Saxon with his machinery, a heavy blow against his own Kingdom over the wild energies of Repulsion. He returned straight-way through the Anglo-Saxon a heavy blow at Christ's Kingdom over Men.

To understand the case fully, we must look back a little. We must turn back to Christ's announcement when He said, according to our version, "Wherefore, behold, I send unto you prophets, and wise men, and scribes" (*Matthew xxiii. 84*).

We notice that in the Greek the same word *apostello* is used in regard to sending these "prophets, and wise men, and scribes" as was used by Christ to the twelve apostles when He said to them, "Behold, I send you forth as sheep in the midst of wolves" (*Matthew x. 16*).

The word used is *apostello* in both cases.

A Lexicon will tell us that the Greek word *prophetas*, which is translated in our version in the above passage as "prophets," means also "preachers," and that the Greek word *sophous* which is translated in our version as "wise men" means also "men of science."

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We may gather, therefore, from the above passage that Christ announced that He had three orders of Apostles: first and foremost, an order of preachers, after them an order of men of science, and after them an order of writers.

We know that the order of preachers duly came, and that the great Divider Satan dealt very hardly with their work and with the Church they founded, and divided it all up. We see Greek Catholics fighting with Roman Catholics. We see Protestants breaking away from and opposing Roman Catholics, and we see Non-conformists breaking away from and opposing not only Catholics and Protestants but also opposing each other. In fact, we find the preachers so occupied in opposing each other as to overlook the common enemy, the great Divider Satan.

It was in this unhappy state of things that the Men of Science came in with their revelation, which, as we find, strongly supports the revelation of Religion if the two are brought together, and moreover shows very clearly, as we endeavoured to point out at p. 217 of Part I of this book, the existence of the two Masters, Christ and Satan.

If the two orders had brought their two reve-

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lations together, their position would have been immensely strong. So Satan got to work upon them, and by taking advantage of a long-standing quarrel, induced the Men of Science to pit their revelation against the revelation of the Men of Religion, with disastrous results to both, instead of using it to help the Men of Religion out of their divisions and difficulties as they might have done.

Look for a moment at the results to Mankind at large. Look at the divisions and upheavals and unrest to-day in political life, in social life, and in family life. Look at the greed and the lust and the selfishness and self-seeking rampant to-day. Look at the envying, and the jealousy, and the class hatred, and the outbursts of ferocious crime, as it has been called, amongst anarchists in East London and amongst motor bandits in France.

In Satan's activity in this respect, we may see, as we take it, a proof that the blow he has received has gone home. "It shall bruise thy head and thou shalt bruise his heel."

Now, Mr. Herbert Spencer, as we have pointed out already at p. 28, found in connection with Parasitism that, "with the existence of two antagonist powers who severally work good and

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evil in the world, the facts are congruous enough."

Well, have we not got the self-same two Antagonist Powers, who are thus discernible as severally working good and evil in the world through Parasitism, here before us now severally working good and evil in the world through the Anglo-Saxon?

In fact the self-same two Antagonist Powers are, as we find, everywhere discernible through Science. They are discernible, as we hold, just as clearly in Evolution and Dissolution, "the processes," as Mr Herbert Spencer remarks, "everywhere in antagonism, and everywhere gaining now a temporary and now a more or less permanent triumph the one over the other" (*First Principles*, 5th edition, p. 285).

They are discernible, as we hold, just as clearly in these two processes of Evolution and Dissolution as they are in Parasitism or in the work of the Anglo-Saxon.

Why, we ask, did not Mr Herbert Spencer follow up the view he got, as it seems to us, of these two Antagonist Powers in Parasitism? If he had done so, he must, as we hold, have come upon them elsewhere.

The explanation, as it seems to us, is that his

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party were blinded by the heat of controversy with Religion and would not allow it. They were blind men as it seems to us. It is written, "thy wisdom and thy knowledge, it hath perverted thee" (*Isaiah* xlvii. 10).

In this connection let us listen to Professor Huxley. "When I was a member of the London School Board," he said in a letter to Mr Edward Clodd, "I fought for the retention of the Bible to the great scandal of some of my Liberal friends—who can't make out to this day whether I was a hypocrite, or simply a fool on that occasion" (*Life and Letters of T. H. Huxley*, vol. ii. p. 278).

When one contemplates the masterly moves of the two great Antagonists, the study of the Anglo-Saxon acquires a breathless interest. When one contemplates the masterly move on Christ's part by which Christ got control through the Anglo-Saxon and his machinery of part of Satan's hosts, of part of the energies of Repulsion, and employed them to collect materials and bring them together instead of allowing them to scatter materials uselessly as is their wont, one perceives at once that the entire outlook for Evolution was changed by it. For it is plain that if the movement is adequately ex-

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tended, it is plain that if the movement thus begun is adequately extended so as to get permanent control of a sufficient part of the energies of Repulsion, it may be made impossible for those energies ever again to get possession of the entire stock of Matter in the Universe and carry it off and scatter it as they once did. Thus there is now available a means of making for ever impossible the alternate eras of Evolution and Dissolution with which the Universe has been shown by Mr Herbert Spencer to be threatened.

Besides this, it will put an end to the state of things prevailing in the Universe to which Mr Herbert Spencer refers when he says, as we have just seen, that the “processes thus everywhere in antagonism and everywhere gaining now a temporary and now a more or less permanent triumph the one over the other we call Evolution and Dissolution.” It will usher in a day of rest after the long era of conflict which the Universe has seen—the day of rest of which Religion tells us when it says “there remaineth therefore a rest to the people of God” (*Hebrews* iv. 9). It will usher in also a new building era—an era in which the temporary buildings of the present Universe, which have been hurriedly put to-

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gether by Evolution in the stress of conflict with Dissolution everywhere in antagonism and everywhere gaining now a temporary and now a more or less permanent triumph, will be replaced by permanent buildings put together by Evolution with the co-operation and help of energies of Repulsion working under control. Perfect work will be possible. It will then be possible to use to full advantage the building materials with which such beautiful work has been done even in the stress of conflict, the beautiful work which is before us in flowers and feathers and scales and crystals.

It is impossible to escape the conclusion that this masterly move is connected with the introduction of a new order of things, and opens the way, in fact, for that new order, for that last stage in the course of Evolution, the construction of a great Edifice in which will be used up the materials of which all the Suns and Stars of the present Universe consist.

With a masterly move such as this opening before us, it is impossible to escape the conclusion that we are now at the end of the present order.

And now let us notice the cleverness of Satan's reply to this move.

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He has received a deadly blow, making by the capture of part of his hosts in the shape of energies of Repulsion, a gap in his defences which cannot be repaired but must go on widening. A forward move has been begun, which cannot be turned back or be turned aside, but must inevitably end in Satan's dislodgment. The end is in sight and cannot be avoided, but it can be retarded.

He turns upon the men through whom this blow was dealt. He turns upon the men engaged in this triumphal march. He turns upon them, and in their hour of triumph, in the time of victory, detaches them from Christ's side. Elated by success, they were quite ready to believe in themselves.

The cleverness of Satan's move did not lie in getting men to accept Darwinism, because Darwinism is quite a good and reasonable explanation of an obscure page in the history of the Universe, which is briefly alluded to in the Bible by saying that, after the different forms of life had been created, the Master rested from His Works. It says, "and on the seventh day God ended His work which He had made; and He rested on the seventh day from all His work which He had made" (*Genesis ii. 2*).

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Well, Darwinism comes in there and shows, as we have already pointed out, what went on on the seventh day when Nature was thus left to itself. It shows how Wild life developed itself by Natural Selection when left to itself.

Thus Darwinism, in its proper place, affords strong support to the Bible, and by the Bible to Christianity, because the fact that God rested on the seventh day is affirmed repeatedly in the Bible and seems at first sight to give quite an anthropomorphic tone to the narrative. But Darwinism comes to our help and shows that this apparently anthropomorphic explanation gives, in homely language, a correct account of what occurred. Darwinism shows that the Master did not carry on His work of Creation to the extent of Creating species, but left off and left Nature to itself to develop itself by Natural Selection.

The cleverness of Satan's move lay in getting men to take this sound and good explanation which, dealing, as it does, with the Origin of Species, is manifestly an explanation belonging to the dawn of life and which in its proper place at the dawn of life supports strongly the Bible, and through the Bible supports Christianity; and then to make it overthrow the Bible and do away

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with Christianity by putting it in a wrong place and presenting it as affording a complete explanation of life in the present day.

If it could afford a complete explanation of life in the present day, it would, of course, do away with Christianity, because, relating as it does to a special time when the Master had, so to speak, left off working and had left Nature to itself to develop, it shows Nature as needing no recognisable Master, but quite able to develop itself by Natural Selection.

If, then, Darwinism could afford a complete explanation of life in the present day, it would go to show that Christ was not needed.

But a moment's examination of the facts will suffice to convince any one that Darwinism does not afford a complete explanation of life in the present day.

Darwinism shows how Wild life could develop itself by Natural Selection without a recognisable Master, but it does not show how Tame life could develop itself without a recognisable Master.

Darwinism explains the development of Wild life without a recognisable Master, but it fails completely to explain the development of Tame life without a master.

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And the present age is manifestly the age of Tame life. Tame life is overspreading the Earth and Wild life is rapidly disappearing before it. And Tame life manifestly includes civilised man. And Tame life manifestly has been developed by a master's selection and a master's training, and in this respect differs greatly from Wild life developed by Natural Selection without a recognisable Master. It was a masterpiece of cunning to detach Man from the Master's side in the very hour of the Master's triumph by such a shallow ruse as this, by taking a good thing and turning it to bad uses by putting it in a wrong place.

The astonishing thing is that it should have been so completely successful in days such as these, in these days of Science, in these days of wisdom.

Well, we must remember that in those days Men were blinded by the heat of controversy, by the controversy between Religion and Science.

Darwinism, with a Master only dimly discernible and very far away, and with Nature thus left to itself developing successfully by Natural Selection, furnished Men with a powerful lever for overturning Religion with its doctrines in regard to a Lord and Master Who had lived as a Man among Men. They availed

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themselves eagerly of the lever thus placed at their disposal, and used it with fatal effect, not perceiving that in its proper place it furnished a strong support to Religion, and that it could only be used against Religion by putting it into a wrong position and using it unfairly. It is impossible to believe that they would have been deliberately unfair, and would have deliberately misled all Men as they did if they had been fully aware of what they were doing; we are forced, therefore, to see in this case the blinding power of Satan. We are forced to see that Man's wisdom avails nothing against Satan's blinding arts. We are forced to see that if Satan can get Men away from Christ, he can blind them to any extent he wishes. We are forced to see that this counter-move by which almost all Men of the Anglo-Saxon type were detached from Christ's side in the hour of Christ's triumph was a masterpiece of cunning on Satan's part.

There is one point to notice, however, that this blow from Satan was not unexpected.

We notice that this blow was foretold and thus foreseen. "Now the Spirit speaketh expressly," says St Paul, "that in the latter times some shall depart from the faith" (*I. Timothy* iv. 1). Again in our version of the New Tes-

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tament we read in *II. Thessalonians* ii. 8, “for that day shall not come, except there come a falling away first.”

This falling away, therefore, was expected, and therefore has been, as we may assume, provided for.

That takes the sting out of it.

But what will be the next move?

With this great falling away before us, we await with awe the further development of the situation. We await with awe the next move.

We remember the Master’s own words, “and Jerusalem shall be trodden down of the Gentiles, until the times of the Gentiles be fulfilled” (*Luke* xxi. 24).

We remember also that it is written, “And He shall be for a sanctuary; but for a stone of stumbling and for a rock of offence to both the houses of Israel” (*Isaiah* viii. 14).

We have got now both Jews and Gentiles stumbling over the same stumbling-stone—stumbling together over Christ.

We think that it may well mean that “the times of the Gentiles” have been fulfilled and that the Jew will be now brought back to join in this great work which is before us all.

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We must not forget the bright side of the picture. We have been looking at the dark side. We must not forget that the picture has a bright side, a brilliantly bright side, as well as this dark side.

We have been looking at the Anglo-Saxon in a day of darkness, we have seen him engaged in the work of leading men away from Christ. We must not forget all that the Anglo-Saxon has done for Christ in getting control over the energies of Repulsion, and thus making possible now the construction of a permanent Edifice in perfect beauty to replace the present temporary buildings, the suns and stars and planets hurriedly put together in the stress of conflict with these self-same energies of Repulsion wildly resisting then, but being now brought under control.

We must not forget that this triumph on the part of the Anglo-Saxon has rendered possible also the advent of a day of rest, for which poor distracted humanity has been sighing so long.

It may well be that the exaltation of this triumph of this day of success was too great for weak human nature and that it could not bear the strain of such success, but had to give way.

It may, we think, well be that a recoil was

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inevitable before a further advance could be made.

The fall has been very great, but the brilliant work which preceded it was far greater, and will not, we believe, be forgotten before Christ when He deals with the fallen Anglo-Saxon.

There is another point also. If this falling away was the result of honest doubting, it will lead us to look more closely into the case, to scrutinise it more jealously and carefully. If it leads to this, then we believe that there will be compensations.

At all events it was, as we have already pointed out, a fall that was expected and foretold. And the fact that it was expected and foretold, makes it clear that it was a necessity of the situation and must not be made too much of.

We await the next move, therefore, with awe, but also with hope, for the situation however dark now is a very hopeful one for the future.

We remember the Master's own words, "Come ye yourselves apart into a desert place, and rest awhile" (*Mark vi. 31*), as showing that He makes allowances for human weakness.

Any way, it is quite clear that we are living in very wonderful times. Wonderful was the

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falling away of the Anglo-Saxon. Wonderful was the height to which he rose before he fell away.

These are stirring times, brimful of human interests.

We have so far dealt much in the present chapter with the contributions of the Anglo-Saxon in the shape of Machines; but we must neither forget nor overlook the contributions of other men in the shape of Instruments.

We must not overlook the fact that the contributions of the Anglo-Saxon in the shape of Machines come in in connection with the contributions of other Men in the shape of Instruments, which so vastly increase the value of the contributions of the Anglo-Saxon.

We must not forget the inventors of the Telescope and of the Spectroscope, which carry us beyond the animal range, beyond the visible surface of the Earth up into the heavens, to heights of knowledge inaccessible to the animal; or the inventors of the Microscope and of the delicate Balance which carry us down below the visible surface of the Earth to depths of knowledge inaccessible to the animal.

We must not forget the wonderful verifications of work done with some of these instru-

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ments which have come of late, which tell us very surely that our labours are not in vain; which tell us very clearly the vastness of the benefits conferred upon Mankind by the inventors and improvers of these and other Instruments.

We must not forget the discovery of the planet Neptune by its effects in disturbing the motion of Uranus. These disturbances pointed to the existence of a disturbing body, the position of which could be determined by calculation. The calculations when made showed observers where to look for and find the disturbing body, the planet Neptune.

The importance of such a feat, namely, the discovery of a great planet by calculation, can scarcely be overrated in any inquiry into Man's status in the Universe, for in it Man, with his knowledge, reaches out far above the Earth.

And what a splendid tribute it is to the value of Man's knowledge. This feat confirmed the correctness of Man's conclusions on the subject of Energy. But there came another feat which confirmed the correctness of Man's conclusions in regard to Matter. There came the discovery by the Spectroscope of the gas Helium in the Sun before it was found upon the Earth. The subsequent discovery of Helium upon Earth was

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a grand tribute to the value of Spectroscopic work, to the value of the Spectroscope, but it was also a grand tribute to the value of Man's conclusions in regard to Matter.

We have got Man with his Instruments adapting himself to an environment far wider than his environment upon Earth, beginning in fact to adapt himself to an environment stretching far into the stellar Universe and showing thereby that this Earth does not satisfy him, does not give him room enough.

We have got Man with desires which take him out into the Universe.

In this connection we must not forget the great feat of the German chemists in analysing the Indigo molecule and separating from it its constituent atoms, and then obtaining supplies of these constituent atoms from other sources and putting them together so as to make artificial Indigo. So successful, indeed, have they been that they have been able with their artificial Indigo to undersell the natural Indigo produced by the Indigo Planters. In addition to synthesising artificial Indigo, chemists, as we learn, are now able to synthesise artificial India-rubber also. These great feats are a splendid tribute to the value and correctness of Mendeleeff's Periodic

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System. We must not forget the great French discovery of Radium, which is adding vastly to our knowledge, and we must not overlook the Italian feat in introducing Wireless Telegraphy, and thereby increasing vastly our power of communicating information.

We have got Man diligently labouring to increase his powers of vision, diligently training himself for a larger sphere.

In the preceding chapter we endeavoured to show that the need to-day is a need of Men with large powers, of Men who can do on a vast scale just what Man is doing now on a very small scale when he controls with his Machines the energies of Repulsion.

Given Men in sufficient numbers and with sufficiently enhanced powers, and the Universe can, as we believe, be rebuilt with the knowledge we now have. The way has been opened.

But Man is not only labouring diligently to increase his powers of vision by the help of Telescopes and Spectroscopes and Microscopes, he is also labouring diligently to increase his powers of hearing by Ear-trumpets and Telephones. Then, too, he is also labouring diligently to increase his bodily powers and capabilities of lifting and rending masses by the use

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of appliances for obtaining mechanical advantage by levers, screws, wedges, etc., and by the use of tools and implements. With these appliances and tools he is able to lift and cut up masses with which, with unaided strength, he would be unable to deal.

With his instruments, appliances and tools, which enhance his powers, Man shows plainly that he recognises that he has need of enhanced powers, and shows, too, that he is labouring diligently to acquire such powers and to fit himself to make full use of enhanced powers. Man is thus training himself for a wider sphere of influence, and for a wider life than any at present open to him.

Into this great company of men of many nations firmly convinced of Man's need of greater powers and diligently labouring with their instruments and appliances and tools to increase their powers; into this great company came the Anglo-Saxon with his Machines controlling energy of Repulsion and showing thus what great things Man was capable of doing. Into this great company came the Anglo-Saxon giving point and meaning to their work and their views.

The instruments and tools and the arts and

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the crafts of these men, especially the crafts connected with the reduction of metals from their ores and with metal work in general, and with the mining of coal and of ore, made possible the Locomotives and Steamships of the Anglo-Saxon.

The Locomotive and the Steamship did not come in by any chance or accident, but they came when the times were ready for them. They came when due preparation had been made for them.

The Locomotive and the Steamship came to men with instruments and tools and appliances for getting mechanical advantage—came to men diligently labouring to increase Man's powers and capabilities and give him a wider and fuller life.

The Locomotive and the Steamship came when they were wanted. They came to bring men together, and to give them a fuller and wider life. They came to show men a fullness and completeness of life undreamt of before. Indeed, so full and so wide and so far-reaching has life become, so full of interest, so full of knowledge, so far-reaching with its tours and its travels, that we seem to be actually in danger of being too much engrossed with it and being led

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to set too much store upon present advantages and comforts and interests. We seem to be actually in danger of losing our ideals by limiting our views and losing sight of a far greater fullness of which the present fullness tells us, by losing sight of the far greater possibilities which are being brought within our reach by the great things which are possible to us now.

This fullness has assuredly not come to us in order to make us self-satisfied, and to enable us to settle down in ease and comfort and slothfulness, or to spend our time and our powers in wrangling over the distribution of the wealth and the good things which it has brought us, or in envying and hating one another and setting class against class. It assuredly has not come to enable us to enjoy ourselves.

But it has come to draw all classes together in brotherly kindness, as being helpers together in the vast work which lies before us; and so fit us for greater things, for a fullness far greater, far better, far higher, far more complete.

Before passing on, let us endeavour to make sure of our position by looking for a moment at the real meaning of the inequalities in the distribution of wealth which form such a marked feature in countries where men of the Anglo-

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Saxon type are working, and about which so much is being said to-day.

Let us ask the men who are inveighing to-day so strongly against inequalities in the distribution of wealth, to take a look at the countries where inequalities in the distribution of wealth are less marked. Let us ask them to take a look at India and China and see how Labour fares there.

Let them look at unskilled Labour, living and bringing up a large family on a wage of fifteen or sixteen shillings per month, not per week as here in England. Having studied the case of the coolie in India and China, let them then look at home at the wages earned by Labour in the early part of the eighteenth century, when inequalities in the distribution of wealth were not so great as they are to-day. It will then be apparent that the wages of the unskilled labourer in those days were very much the same in England as they are in India and China to-day. Having considered well these facts, let them now return to India again and see everywhere men making small hoards of money and then burying them in the ground, too ignorant or too fond of them to invest them and too timid even to use them in making themselves comfortable for

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fear of shewing thereby that the hoards are in existence.

There is to-day in India a great sum of money buried in small hoards all over the country, which if aggregated in the hands of large capitalists would be used in starting factories and works of many kinds, and in opening up and developing the country to the great advantage of Labour, but distributed as they are over a multitude of small holders and carefully hidden away are lost to the country.

Party Government, with its changeful moods and with the latitude it allows to the Demagogue and the Socialist, is not suggestive of the permanence of rule which the Hindoo wants to make him confident and prosperous. He remembers the terrible troubles which accompany change of rule. He remembers the terrible times during the closing years of the Moghul Empire, when the Mahratta hordes made their yearly raids, now on this side and now on that, with fire and sword devastating the country far and wide.

He remembers these times and he makes, if he can, a hoard of rupees and buries it so as to be prepared for emergencies; and the community suffers for want of the wealth thus uselessly buried.

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The weakness of the Moghul Government let loose upon the country the predatory Mahratta hordes. If the Government in this country should become weak, the predatory hordes, the criminal classes of our great cities, would be let loose.

We, too, should then make our hoards and hide them as the Hindoo does in India to-day.

The world needs for progress great stores of capital in order that the great reserves of Labour which it possesses may be usefully and profitably employed, but it needs to have its stores of capital in the hands of capable men, big enough and strong enough and wise enough to turn them to good account, and not in the hands of a timid multitude who will hoard and hide and let Labour starve.

Wealth has wings. It would be easy to-day for a country grown mad to drive away its capitalist classes by unjustly taxing them and worrying them. But before this is done in any country, let Labour turn to India and China and learn from the poverty-stricken millions there what its own sad condition will be if the capitalist should leave the country.

But now let us turn back again to the Anglo-

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Saxon, and to the consideration of the fullness which his Machines have brought to human life.

But let us not, however, forget that the fullness so far reached is only the beginning of a far greater fullness and far higher.

A beginning has been made. We have only to follow up. For we know to a considerable extent the constitution of the Universe. We know to a considerable extent the materials of which the Universe has been built up and how they are put together. We have only to go on in the way we are already going, to go on with sufficiently enhanced powers in order to complete our knowledge of the materials of which our Universe has been built up. We already know in our Laboratories how to deal with these materials. We know how to take them to pieces and how to put them together again. Not only do we know how to put them together again so as to reproduce with them the substances which were taken to pieces, but we know also how to make with them other substances, new substances not found as far as we know in Nature at all.

The need of the Universe to-day, we insist, is a need of men with sufficiently enhanced powers and in sufficiently vast numbers, and the work

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of rebuilding the Universe can be done. And this is the time we choose for falling away from the Master Who has rescued us and trained us and bought us by His precious blood.

Assuming that our attainments and our success in enlarging our powers by instruments and tools and machines are a proof that enhanced powers can be conferred upon us and can be turned to good account by us, there seems, so far as we are able to see, nothing to hinder the next move, the final stage of Evolution, the erection of a vast central Edifice with the materials contained in the suns and stars of the present stage, except the want of men in sufficient numbers.

It seems probable in fact that the delay now is connected with arrangements to enable the Orientals to come in. They are to all appearance coming in. They are visibly beginning to stir. The Eastern peoples are beginning to stir and are even, we may say, actually some of them on the move. The Locomotives and the Steamships are arousing them. On all sides they are getting restless.

And when they do come in in their hundreds of millions, what an addition they will make with their quiet reverence and devoutness to the

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hosts that are gathering or have been gathered.

The Japanese people, we insist, have made it quite clear that the Eastern peoples can assimilate Western knowledge and follow Western ways. We also insist that the present restlessness in the East is a sign that the Eastern peoples are learning the lesson which Japan is teaching them.

We have been dealing so far with the work which the Anglo-Saxon has done for the world.

We notice that this work comes in to supplement the work of the Egyptian in giving Mankind civilisation and in giving Mankind by buildings control over Matter, which is one of the two realities which together make up the Physical Universe as Science recognises.

The Anglo-Saxon with his Machines gave Mankind, as we have already pointed out, control over energy of Repulsion, over Heat Energy. Energy is, as Science shows us, the other reality of which the physical Universe is made up. Through the work of the Egyptian as supplemented by the Anglo-Saxon, Mankind has thus got in a small way or is getting control over both of the constituents of the physical Universe.

In the next Chapter we hope to show that the Egyptian and the Anglo-Saxon have

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neither of them come accidentally into the world, but came after due preparation had been made for both of them.

If we can show that both of them are the outcome of a long course of preparation leading directly up to them, then we shall, as we think, make it clear that both were wanted, both represent a need of the Universe, a need not to be otherwise met.

CHAPTER V

PREPARATION

WE find that civilised Man has not come accidentally into the Universe. Man comes before us in Geology in early Palæolithic times as a being with a very large brain, as Sir Ray Lankester has pointed out (*The Kingdom of Man*, p. 24), and thus as a being eminently fitted for training by a Master.

The possession of a large brain denotes, as Sir Ray Lankester has pointed out, educability. Thus we find preparation made for civilised Man in uncivilised times before civilisation had begun.

At the same time, we find this being, this anthropoid ape with a large brain, without any sufficiency of fangs or sharp claws to enable it to defend itself against carnivorous foes, and therefore obliged to arm itself with sharp flints or other weapons to make up for its deficiencies in means of offence, when it left the densely wooded equatorial regions to which anthropoid apes belong, and came out into the open. In the dense equatorial forests food and shelter were abundant all the year round; and it could hide

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from foes it was unable to resist, or escape from them by climbing up trees, but out in the open its difficulties were many. We are shown an animal eminently suited for training and an animal in great need of teaching, owing to its many wants and deficiencies. We find this being coming before us as the last and highest achievement of Organic Evolution.

We find it taken in hand and trained—led out away from the equatorial forests and trained to chip flints and cut up trees and use fire for warming itself and for cooking and making digestible the flesh and the coarse food which cold regions supplied.

The materials were thus prepared and then a place was also prepared in the great Nile Delta, bordered as it doubtless was in early times by dense forests and covered with reeds, swarming with fish and alive with flocks of wild fowl, a happy hunting ground at the junction of Asia and Africa and with Europe close by.

Here the wild hunters of the three continents could congregate and settle down, and find all that they wanted about them, warmth and water and rich soil for cultivating fruit and vegetables, fish and game in abundance, and shelter and fuel in the forests.

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It is not wonderful that the wild hunters should have come in here from all sides, bringing the skill and knowledge of Africa, Asia and Europe together, and here in a settled and prosperous condition should have improved their ways of living, bringing the art of flint chipping to perfection and learning how to burn pottery and weave, first reed-mats and afterwards linen-cloth and clothes.

It is not wonderful either that the well-armed, well-equipped permanent settlers should have brought newcomers into subjection in the same way as the Children of Israel were later on brought into subjection and forced to co-operate in the construction of great works.

In fact, it is not difficult at all to understand how the Delta came, in course of time, to be dotted over with small communities of permanent settlers, living in a state of comfort unknown to the wild hunters of the caves, in rude shanties formed with boughs of trees or bundles of reeds.

The face of the country, when the hills were as yet undenuded of their dense forests by Man's need of fuel and the swamps undrained and the reed beds untouched, was of course very different from what it is now.

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Very different, too, was the life in it when the hippopotamus and the rhinoceros wallowed in the swamps which covered it, and the elephant and the lion roamed through the forests which fringed it, and herds of antelopes of sorts and of zebras and of gnus were everywhere in evidence, either in it or on the hills about it, and the air was resonant with the cries and the cackling and splashing and flapping of innumerable flocks of wild fowl.

In such surroundings, the communities would be driven to combine for common safety when wild beasts threatened their cultivation or their villages.

We can understand how the wild cave-dwellers' knowledge of drawing would come in usefully there. We can understand how incised drawings of the foe would be sent round from village to village to collect men for the chase, how the place of the rendezvous would be indicated by a drawing of some well-known object, such as a tree or a hill put in alongside of the drawing of the foe, and how the time for the meet would be shown by a half-hidden disc of the sun, if the meet was to be in the early morning, or by a sun with a perfect disc high up if the meet was to be at noonday.

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We can understand how in this way pictorial representations would in course of time come to have sign values or conventional values attached to them. We can understand how the upper half of a disc low down might come to represent early morning and how a full disc high up might come to represent noonday, and how the lower half of the disc might come to mean evening; and how a pictorial representation of the animal most frequently hunted might come in time to mean a summons to a hunt as distinguished from a summons to a "palaver" or assembly for talk.

We can understand also how each village or community might have a sign of its own, in the shape, perhaps, of a pictorial representation of a hut, with a pictorial representation of some remarkable tree or rock or other object near the village added to the representation of the hut.

We can thus understand how these summons might show the nature of the meeting, the place of meeting by the sign for the village at which the meeting was to take place, and the hour of meeting by a complete disc if the meeting was to be at noonday, by the upper half of the sun's disc if the meeting was to be at sunrise, and by

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the lower half (or upper half reversed) if the meeting was to be at sunset.

In some such way as this we can follow the transformation of the incised drawings of the cave-dwellers into the incised hieroglyphics of the Egyptian.

Of course it is possible that the art of incised drawing spread from the Nile Delta to the cave-dwellers. In any case it seems probable that there was a close connection between the incised drawings and the hieroglyphics and that writing originated in incised drawing.

In some such way as this, too, we can explain how the Egyptians came to have three separate names for the sun, namely, Harmachis for the rising sun, Ra for the noonday sun, and Tmu for the setting sun, with three different hieroglyphic formulas.

We can easily understand that in course of time these hunting parties would come to be made up of representatives from many communities, and would grow into large assemblies which would need control and direction to make them successful; and how it would naturally come about then that some man conspicuous for cunning, strength and courage would come to be chosen as leader in hunting expeditions.

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He would acquire a habit of commanding, and they would acquire habits of obedience.

Naturally after a time the leader of the hunting expeditions would become king of the people.

Laws would be made, officers appointed, and life regularised and the dawn of civilisation would begin.

We conclude that civilisation did not come in accidentally, but came in with due preparation. It was natural that the best flint chippers that the world has seen should grow into the best stone cutters that the world has seen.

We know the men who did it from the remains in the thousands of graves in the prehistoric cemeteries.

They were strong believers in Immortality, as is evidenced by the provision made for the wants of the occupants of the graves in a future life in the shape of knives, pottery, meats, etc., placed in the graves. One of these graves is on view in the Egyptian Room in the British Museum. The Catalogue of the British Museum draws attention to the fact that it is the grave of a believer in Immortality.

The occupant of that grave was buried like other neolithic men of his time, in a grovelling

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posture, presumably indicative of submission and of recognition of the fact that men were under a Master.

These graves, in thousands placed close together, plainly show that large communities of neolithic men occupied the Nile Delta, or at all events the upper part of it. For we learn that these prehistoric cemeteries extend from El Kab in the South to El Kawamil in the North. We are told "that all the important necropoles and kitchen-middens of the pre-dynastic people are to be found in the districts of Abydos and Thebes, from El Kawamil in the North to El Kab in the South" (*Egypt and Western Asia*, by L. W. King and H. R. Hall, p. 29).

In these cemeteries, in which, as we learn, the graves are "pressed closely together, so that they often impinge upon one another" (*Ibid.* p. 28), we have not only evidence of the existence of large communities, such as theory requires, but also in the mode of interment evidence that the people who disposed of their dead in this way had ideas in regard to life and death and immortality which raised them far above the animal level and were orderly and methodical in their habits.

The neolithic man in his grave in the British Museum, with his pottery and knives and a sup-

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ply of food buried with him, tells us surely that he and his fellows had grasped, not merely the idea of Immortality in general, but the idea of a future life which was to be a continuation of this present life, and moreover the idea of a future life for which preparation could be and must be made here and now.

We have, in fact, men at the very dawn of civilisation, dimly perceiving but firmly grasping the same ideas as those which Science, as we hold, is forcing upon us by its discoveries at the close of civilisation.

Science is telling us, as we have already seen, of another stage in the progress of Evolution. It shows us a series of stages. In the first stage, atoms are built up into molecules; in the second, molecules are built up into masses; in the third, masses are built up into bodies; in the fourth, bodies are built up into planetary and solar systems; in the fifth, solar systems are brought together to form a Milky Way or condensation of solar systems. One term in this series is wanting; it is the last term, namely, a sixth and final stage in which the solar systems will be put together and used in building up a vast crowning Edifice.

Mr Herbert Spencer, as we have already

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pointed out, recognised fully that this stage is wanting. "When," he says, "that integration everywhere in progress throughout our Solar System has reached its climax, there will remain to be effected the immeasurably greater integration of our Solar System, with other such systems" (*First Principles*, 5th edition, p. 536).

But this will involve the breaking up of all the bodies in these Solar Systems and their reduction once more into atoms. If they are made over to energies of Repulsion, the reduction will be effected, but atoms will once more be scattered in disorder throughout Space in the same way as they were scattered before, as the Nebular Theory of Astronomy teaches us.

Evolution would then have to begin over again with the same result in the production of a number of separate bodies. We should have the alternate eras of Evolution and Dissolution which Mr Herbert Spencer speaks of in *First Principles*, 5th edition, p. 587. To avoid such a result, it will be necessary to get the energies of Repulsion to work under control upon the bodies, so as to get them broken up gradually, and then get the broken parts brought in to the places where they are wanted. To break up the bodies gradually, the energies of Repulsion,

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by which bodies are broken up into masses, and masses broken up into molecules, and molecules broken up into atoms, must be got to work under control and directed so that pieces may be taken off at the proper places and then brought in to the points where they are wanted and put together.

Now we find Man diligently training himself for this kind of work.

He cuts up the trees into beams and scantlings and planks, and then he makes roofs and doors and windows and fences. He breaks up rock masses and builds walls. He extracts fibres from plants and weaves cloth. He separates metals from their ores and makes tools and weapons, and machines, and bridges and ships. His last and final triumph in this direction consists in the breaking up of molecules and separating from them their constituent atoms, and then using these atoms to form molecules of other kinds not found in Nature. In another direction he is diligently engaged in getting control over the energies of Nature and specially over repulsive energy in the form of Heat, so as to compel it to work under control, not only for the purpose of breaking up masses of Matter, but also for the purpose of transporting ma-

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terials from place to place and depositing them where they are wanted.

In all this, Man employs the energies of Nature to undo former dispositions of Matter, and make new dispositions different from any found in Nature, and make them under his own control and direction.

To understand the full meaning of Man's achievements and work, we must, as we hold, look beyond this Earth. Man's work and his triumphs involve sad loss and disfigurement to the Earth and to its wild things, to its lovely forests and to its graceful wild animals, and to its lovely birds and beautiful insects.

Civilised Man, as we conclude, does not belong to this world; this world is not his home. It is only man as a wild anthropoid ape who belongs to this world. The proper home of civilised Man is in that far-off new world for which preparation on so vast a scale is being made by the ingathering of all the great suns and stars in the Milky Way. In putting that world together and disposing atoms to full advantage by making with them the many beautiful things which can be made with them, as shown by the lovely crystals, feathers and flowers and fronds which are about us here, Man will be able to

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turn his knowledge and his arts and crafts to full account.

But that great crowning Edifice, vast as it will be, will not fill the vastness of Space, and there will be, as we conclude, a place outside it from which all light and brightness has been taken away by gathering in from it all the suns and the stars.

There will be, as we conclude, the great crowning Edifice full of light and beauty and gladness, glorious in its orderliness; and an outer darkness occupied by the wild disorderly energies of Repulsion, which have not been brought under control and used in building up the glorious home of light and brightness. This we take to be the "outer darkness" of *Matthew* viii. 12 and xxii. 18, with a King of its own, the foe of all order and discipline. That King will have about him the hosts of banished energies of Repulsion, and those who have cast in their lot with him here and chosen him as their Master, greedily swallowing the baits he offers in the shape of pleasure and popularity and riches and dress. These things are not wrong in themselves; they are in fact good things when enjoyed in moderation, in their proper place and time, but ruinously wrong when they are made

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the object and end of life and sought for greedily and unscrupulously—hopelessly bad when they absorb the attention and leave no time to care for nor desire to obtain things higher and better.

The merit of the neolithic men in the Nile Delta was that they reached very imperfectly indeed and very feebly but still surely the idea of a life to come, which was to be a direct continuance of this present life, and that preparation for the life to come had to be made here, and with that idea roused themselves and raised themselves, so that we are told that “the art of flint-knapping reached its zenith in Ancient Egypt” (*Egypt and Western Asia*, by L. W. King and H. R. Hall, p. 15). In regard to their pottery, we are told “that their pottery is of remarkable perfection . . . all the vases, even those of the most perfect shape, were built up by hand. The perfection of form attained without the aid of the wheel is truly marvellous” (*Ibid.* p. 15).

We are told that “the best flint knives of the early period—dating to just a little before the time of the First Dynasty . . . are undoubtedly the most remarkable stone weapons ever made in the world. The grace and utility

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of the form, the delicacy of the fluted chipping on the side, and the minute care with which the tiny serrations of the cutting edge, serrations so small that often they can hardly be seen with the naked eye, are made, can certainly not be paralleled elsewhere" (*Ibid.* p. 15).

It is not wonderful that these men who worked so devotedly and did so well with small means should have developed into the greatest stone cutters and builders the world has ever seen.

We see how men become great under the influence of great ideas.

We see in the Egyptian how a race of men became great in the use and disposition of materials for the construction of great buildings and how they taught all nations to build places of residence for the living and for the dead.

We see how preparation was made for the production of the Egyptian: the men were prepared and a place for them was prepared.

We pass now to another race who became great, not only in the use and disposition of Matter, but also in the employment and control of Energy.

Matter and Energy are the two realities which Science recognises as being present in the Universe, Matter being the body of the Universe



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and Energy being its life and activity. The Egyptian took Matter in hand and succeeded, as we have seen, in getting control of it.

We pass therefore to another race which has taken in hand the other reality, and has done great things with it. A place was, as we have seen, prepared for the Egyptian in the shape of a land swarming with game, very attractive to the wild neolithic hunters, a place, too, where water was found in abundance and where a fertile soil, enriched every year by a fresh coating of silt from the river, supplied abundance of vegetables and fruit. The place, in fact, was one with a warm climate where men would naturally collect and settle down, finding all their wants supplied.

A place was prepared, too, for the other race, the Anglo-Saxon people, but a very different place from that prepared for the Egyptians. Theirs was a place inviting settlement, a tempting place to settle down in. The place prepared for the Anglo-Saxon made men restless, and set them on the move. It was a group of islands washed by a great Ocean, lying on the edge of a great Continent, and having a cold climate and a poor soil—a land where Man had many wants which set him roaming, a land attractive

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to the hardy rovers from the North and attractive also by its greenness to wanderers from the parched lands of the South. The Nile Delta was a fine place for settlement, the British Islands supplied a fine base for further wanderings. To the British Islands came travellers bringing strange stories of their wanderings in far off lands and of the wonderful sights they had seen. Thither came also the persecuted, the men with ideas of their own, which they could not keep to themselves, ideas which disquieted men's minds and roused them from somnolence, and made them angry by forcing them to think. Thither came also navigators, bringing spices and condiments, and fruit and cloths from sunnier regions, and telling of arts and crafts practised in other lands.

The land was throbbing with life and activity. Moreover, it was a land bountifully supplied with ores of iron, and with great coal beds with which the ores could be smelted, and large supplies of iron obtained for the construction of weapons and tools.

We have seen so far that the Anglo-Saxon race have not come accidentally into the world. We have seen that due preparation was made for them.

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There was no warm cradle made for them in soft surroundings, with sunny skies, luxuriant vegetation, and dainties in abundance, such as was made for the Egyptian to attract him to a settled life—to a life which could be lived delicately.

Cold winds, grey skies, coarse fare, making men hardy and active, were provided for the Anglo-Saxon, with nothing soft to tempt him to settle down and live luxuriously. But for all that, there seems to have been an ingrained desire in them to settle down and live easy, comfortable lives. For we find them again and again aroused by the advent of invaders. The British Isles were beautifully green, and offered a tempting prospect to the hosts from the parched South, and to the hordes in the bleak North. And so they came—the Phoenician and the Roman, bringing the wisdom and the civilisation of the South, and the Saxon and the Dane and the Norman bringing hardiness and love of adventure from the North—and stirred up the dwellers in the British Islands from time to time whenever they settled down and became sleepy. The Anglo-Saxon was wanted for a life much better and higher than a life of mere ease and comfort. He was wanted for an adventurous,

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energetic life, and so he was continually stirred up and goaded into activity. His foes moulded him and harried him, and his friends made him think.

The Anglo-Saxon was given an island home—a group of islands on the edge of a great Continent and on the verge of a great Ocean—a base for exploration. And the land was stocked with adventurers, with the Phœnician and the Roman from the South, and with wild, rough rovers from the North, restless in body, and after them came, as we have seen, men restless in mind, the persecuted ones, fleeing from other lands, the men with ideas which they could not keep to themselves and which irritated dull men by compelling them to think. Between them they harried and moulded the Anglo-Saxons, and made out of them a hybrid race with many streams of blood in it. The restless population thus out-turned found ready to hand great stores of iron ore in the land, and great beds of coal beneath the surface, on which to expend some of their energy and provide themselves with stores of iron for the manufacture of weapons and appliances which they required for their adventures.

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With such advantages it was natural that there should be a great output of iron.

When the supply of iron was abundant, it was natural that cooking utensils should be made of iron as well as tools and weapons, and that the cooking utensils should be made with closely-fitting lids.

When water came to be boiled in vessels with closely-fitting lids, naturally it was found that jets of steam were blown out from these vessels with considerable force.

And when it was found that powerful jets of steam could be obtained by boiling water in closed vessels, attempts were naturally made to use the flow of steam which could be obtained in this way for the purpose of driving machinery in the same way as the flow of water in streams had been used from the earliest times to turn water-wheels, and the flow of air in wind and in air-currents used in driving wind-mills.

No doubt many experiments were made in the use of steam for driving wheels, etc.

But when it was noticed that the lid of a saucepan in which water was being boiled alternately rose and fell, being lifted by the steam when the pressure of the steam in the saucepan became high, and falling back by its own weight when

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the steam escaped, and when it was found, also, that the lid could be made to go on for a long time alternately rising and falling by keeping a good fire under the saucepan, it was not unnatural that cylinders should be made in the form of modified saucepans with pistons in the form of modified lids to rise and fall in the cylinders, like lids on the saucepans. When the idea of the cylinder and piston had been reached, it was an easy step to put cylinders in pairs at the opposite ends of beams of double pumps, and other fixed machines, and let the piston at one end lift the beam while the piston at the other end was falling.

And when the crank and the piston with a jointed rod had been invented, it was a comparatively easy step to make pairs of wheels with cranked axles, and put a pair of cylinders to each to drive them, and thus place in the hands of these restless men machines which would carry them on land, by locomotives running upon railways, or at sea by steamers driven by paddle wheels.

The Locomotive and the Steamer were available then to carry man and his materials over the habitable or traversable surface of the Earth by means of heat, captured by means of mole-

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cules of water in the form of steam, led by pipes in the direction it was wanted to go, imprisoned in cylinders, and not allowed to escape until it had done its full share of work in moving Matter to the place where it was wanted to be.

At the same time, fixed machinery driven by steam was available to cut up timber and stone by the circular saw, to drill holes in the rocks so as to enable the rocks to be broken up by blasting, and available also to break up pieces of rock by stamping machines, and other machines in which heat energy was employed under control to break up things.

Fixed machinery was available also to put things together, to spin cotton, wool, silk, and flax into threads, and then with the threads to weave cloth and calico and linen, etc., also it was available to weld masses of metal by the steam hammer and to help in many ways in the construction of buildings, machines, etc.

Energy of Repulsion, which once scattered the whole stock of atoms in the Universe and dispersed them in disorder throughout Space, as the Nebular Theory of Astronomy shows us, was here working under control, no longer scattering in disorder but now collecting atoms by carrying masses of them to places where they

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were wanted for building purposes, and was now engaged in breaking up under control existing masses or structures to enable other masses or structures to be built with the materials obtained from those which had been broken up.

This kind of work reaches as we have already seen its climax in Chemistry when molecules are broken up and their constituent atoms isolated and then the isolated atoms are used in making up other molecules. The Chemist has proceeded so far in this work that he now knows that all the thousands upon thousands of substances and bodies found in Nature, whether animate or inanimate, are made up of a small number, possibly not much over one hundred different kinds of atoms, which are recognisable by their weight and by their spectrum.

He finds that the weights of the atoms are arranged to form a very remarkable order called the Periodic System, which is made up of a number of series by the reproduction of the same series again and again on a different scale. The Chemist has not succeeded so far in isolating the atoms of Radium and Polonium. The Physicist recognises these substances by their spectra and by their radio-activity, and not with any certainty by their weight. Implicit confi-

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dence can be placed in recognition by spectrum, since the inert gas Helium was discovered by its spectrum alone before it was known on Earth. We can hardly make too much of such a feat as that of the discovery of Helium in the Sun before it was known on the Earth, as showing Man's worth and power. But at the same time, we recognise that it would be a very great advantage to have the Radium and Polonium atoms isolated, as we should know then very much more about these interesting things than we do now. For our own part, we have another reason for desiring to see Radium and Polonium isolated.

We notice that there are two remarkable gaps in the Periodic System amongst the metal elements at the beginning of the System where the system is otherwise complete. It will be noticed on turning to the Table at p. 174a, that the tetravalent metal member with atomic weight 18 of the series Helium 4, Lithium 7, Beryllium 9, Boron 11, is missing. Also that the tetravalent member of atomic weight 29 belonging to the series Neon 20, Sodium 23, Calcium 24, Aluminum 27, is likewise missing. The form which our theory assigns to this missing atom is given in the illustration, at p. 1. It will be

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noticed that this atom with four flat-topped prominences on its spherical surface is the most irregular in configuration of all known atoms, with the exception of the other missing atom, which is more irregular in configuration still, having the same four prominences but a smaller spherical surface on which to carry them. These atoms, each with three projections standing out in a plane at right angles to the longer axis of the atom, like three teeth in a grappling iron, would, we may suppose, be very difficult things to extract from a mass of atoms grappling, as they would, all other atoms about them that were irregular in configuration.

Our opinion, therefore, is that it is possible that Radium compounds are double compounds, in which one of the atoms is the atom of Radium, and another is a heavy metal atom irregular in configuration, with which the Radium atom is almost, if not quite, inextricably interlocked.

We imagine, for our part, that it may some day be found possible to isolate Radium by vaporising some Radium salt and then suddenly expanding the vapour at a very high temperature.

If Radium and Polonium can be isolated, our knowledge of Matter will be enormously in-

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creased. With a better knowledge of Matter we shall be able to get clearer ideas in regard to Energy also.

The specially interesting point in connection with Radium is its great capacity for Energy.

The great capacity for Energy of the water molecule has led to its employment in capturing Energy.

The great capacity for Energy of the water molecule is shown not only by the fact that its specific heat or capacity for heat energy is greater than that of any substance, liquid or solid, which has been isolated (*Inorganic Chemistry*, by Victor V. Richter, translated by Smith, p. 90), but also by the fact that a drop of water when placed between two sheets of glass with perfectly clean surfaces spreads out and draws the two sheets of glass forcibly together, so forcibly, in fact, that Professor Tait tells us that drops of water are able to break great sheets of plate glass. In this case, the water drops draw mass to mass. In the form of water of crystallisation, water molecules draw compound molecules together and enable cohesion to build up crystals, as, for example, the crystals of anhydrous copper sulphate and water which fall to powder when the water of crystal-

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lisation is driven off by heating, but resume the crystalline form again when the powder is dissolved in water.

In this case, water draws molecule to molecule. Dr H. Brereton Baker has shown that a trace of water brings about combination between gases which do not combine in the absence of any trace of water.

He has shown that sulphur and even phosphorus could be distilled in dried oxygen "without burning" (*Nature*, vol. 80, p. 175).

In this case we have water drawing atoms together and enabling chemical affinity to come into play and unite the atoms in the form of compound molecules.

Thus we have water drawing mass to mass, molecule to molecule, and atom to atom.

This seems to show that water has a great capacity for Attractive Energy as well as a great capacity for heat.

The water molecule has been in use for capturing Attractive Energy by means of water-wheels for ages. The great triumph of the present day is the capture of Repulsive Energy, or heat energy, by using the water molecule as a trap. Captured in this way, heat energy can be led by pipes to any point where it is required

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to work, and there employed in driving a piston or a turbine. Later on it was found possible to capture heat energy directly without the use of any trap, by means of the gas engine, with which heat is captured, at the point where it is required to work, and is not led by pipes after it is captured. Man had for ages been in training in the use of heat in warming himself, and in cooking food, and in smelting iron ores for the purpose of obtaining a supply of iron for implements and weapons.

Man now not only uses heat for cooking and smelting, but has it so well under control that he is able to employ it to transport materials to points where they are wanted. This apparently makes Man's training complete. Under Egyptian tuition Man has learnt the use and disposition of Matter. Under Anglo-Saxon tuition, he has gained control of heat energy. Matter and Energy are, as Science shows us, the two realities of the Universe.

No other ape, no other animal, has been able to learn from Man the use of heat. Some of them thoroughly enjoy a fire, but they cannot learn from us how to make a fire, although day after day they see fires made. They cannot even keep a fire going when it has been made. No ape,

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no dog, can do this. No ape, no animal, has been able, either by learning from us or by teaching itself with our example before it, to raise itself to our level. The fact that we have not been able to raise any ape or animal to our level in all the ages during which we have had them in captivity as our associates, goes to show that to raise animals to human level requires an intelligence and a power greater than human intelligence and power—goes to show that Man has not raised himself but has been raised and trained by a Master higher than any human master. The fact that the sheep-dog has learnt from us to suppress the dog will within it, the will of the wolf which urges it to kill sheep wherever found, and to do Man's will which requires it to protect sheep and guide them, makes it perfectly plain that the animal is able to learn the will of a master, and to subordinate its own will to the will of its master, and to suppress its own natural desires in order to do its master's will. And since Science now shows us that we are animals, there is no possibility of denying or getting out of the fact that the case of the sheep-dog goes to show not only that there is a Master above us, but also that we are the outcome of the Master's training, of the Master's efforts.

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It goes to show that we are wanted, and greatly wanted. It goes to show that we are of much worth.

It goes to show also that the Egyptian was right in his conclusions as to a future life which is to be a direct continuation on a higher scale of our present life. We can very well understand why we are of much worth. For we know that this energy of Repulsion with which we are working and which we are learning to control is the great scattering and disorganising force of the Universe which opposes and mars the work of energy of Attraction.

We know that there is one stage wanting in the course of Evolution, and that is the integration of all the suns and stars in one great crowning edifice, or, to use Mr Herbert Spencer's words, we know that "when that integration everywhere in progress throughout our Solar System has reached its climax, there will remain to be effected the immeasurably greater integration of our Solar System, with other such systems" (*First Principles*, 5th edition, p. 586).

We know that when this vast integration, this vast crowning Edifice has been constructed by putting together all the suns and stars into one great whole, all possibility of collision will be

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over, and an age of perfect tranquillity and rest will ensue, “ the rest that remaineth for the people of God.”

But we have as we have already pointed out good grounds for the conclusion that that great day of rest cannot be reached in the ordinary course, because of the difficulty of getting the great suns and stars taken quietly to pieces and compacted into one great whole. To get them taken to pieces in the ordinary course, they would, as we conclude, have to be made over to energy of Repulsion. They would then be diffused once more throughout Space and the work of energy of Attraction would begin over again with the same result as before—a result in which the final stage would be as impossible of attainment in the ordinary course as it is at present.

In fact, the Universe, as Mr Herbert Spencer tells us, is threatened with “ alternate ‘eras of Evolution and Dissolution,’ producing now an immeasurable period in which the attractive forces predominating, cause universal concentration, and then an immeasurable period during which the repulsive forces predominating, cause universal diffusion” (*First Principles*, 5th edition, p. 587).

But it is evident that the outlook will be com-

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pletely altered if energy of Repulsion can be brought under control and made to work on a vast scale, in the same ways as those in which it is made to work on a very small scale, in our quarries, in our laboratories, and in our railways.

In our quarries, heat energy is used in blasting operations to detach masses of rock; in our laboratories, it is used in isolating the atoms of elements from compound substances; and in our railways, heat energy is employed in transporting materials from place to place and depositing them at points where they are wanted.

If heat energy can be employed in these same ways, on a vast scale, on a scale sufficiently vast to meet the requirements of the Universe, it will, as we conclude, be possible to get the great suns and stars taken quietly to pieces, and used up in the construction of one great Edifice, in which all the materials are disposed in the best possible way.

In other words, our conclusion is that our ways are right, and thus that we are in training for work of this kind, and have made a start, albeit on a very, very minute scale, owing to our present weakness and blindness.

We conclude that our training is already so far advanced, that with sufficiently enhanced

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powers of vision, action, and motion, the reconstruction of the Universe by compelling energy of Repulsion to co-operate with energy of Attraction, in the work of taking the suns and stars quietly to pieces, and building up with them the great central Edifice, could be taken in hand at once if the work of collecting the suns and stars were sufficiently advanced at any point in the Universe.

It seems to ourselves that the times are ripe for a change.

The unrest of the nations, the breaking down of ancient barriers and distinctions, the upheavals in family life, in social life, and in national life, seem to ourselves to point to a coming change.

No doubt Aviation will add greatly to our skill in applying energy, but it is not likely to add much to our knowledge. It is, in fact, merely an extension of work done on land or at sea into the air. When motor cycles capable of running at great speeds on land had been invented, it was to be expected that we should follow the lead the birds had given us and attach wings to the motor cycles, so as to take the weight of the cycles off the ground and reduce the work of the machines.

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It might have been expected that wings would have been used to help in running and their use gradually extended until running ended in flying. That was the safe way of learning to fly, by gradually learning the use of wings.

We have not been satisfied with the slow and safe method of the birds, but have taken the more dangerous method of the animals, namely, the method of learning to fly by falling and gliding. We have succeeded, though at great cost. Our success will add greatly to our skill but not to our knowledge, since it represents no new departure, but only an advance along lines already known. In fact, the situation does not suggest the possibility of any fresh development. Our failing nerves and eyes and digestions warn us that we have pretty nearly reached the end of our tether.

But as it is, we undoubtedly, as it seems to us, represent a great asset. We represent a great gain to the Universe. This becomes clear we think beyond all possibility of doubt if we look closely into the situation.

We represent a great gain recovered from a great loss.

That side must not be forgotten or overlooked. But if the situation is to be rightly understood, we

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must at the same time not overlook the fact that our status in Nature is that of Rebels. It is Human Selection that is now running on the Earth and not Natural Selection.

It is no wonder that mystified Physiologists look in vain for Natural Selection to-day. Human Selection—Human need and greed—have clean made away with it. Natural Selection is quite played out.

What else do these human clearances, well nigh covering the habitable surface of the Earth, mean? What else do these plantations mean, these forests, these orchards, these vineyards, these grain and root crops, with trees and plants all set out at regular intervals, what else do these pent up flocks and herds mean, kept down as they are to the number each enclosure will carry? What else is the meaning of it all?

It means that Nature has no longer a free hand, and that Man has got things his own way or is fast getting them so.

It means that Darwin's account relates to the long past, to ancient history, to the ages before civilised Man appeared upon the Earth. We have been reading it as if it were related to current history.

To-day the struggle for existence is many-

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sided, but largely resolves itself into the question of winning Man's favour or of evading Man's enmity or powers of destruction.

The fact which we wish specially to bring to notice is that all this makes it quite clear that Man is a Rebel, and that he has upset the order of Nature.

We have dwelt upon this view of Man several times before.

But Sir E. Ray Lankester has as we have already pointed out made it very clear in his exceedingly interesting book, which he has called *The Kingdom of Man*. His book made its appearance after Part I of *Man and His Future* had been written, and was in the hands of the Publisher. A brief allusion was made to *The Kingdom of Man* in the Preface, but no time was available for studying the book closely. When it is studied, its close relationship to *Man and His Future* becomes quite clear. Both books, as it seems to us, deal with the same subject, which is Man's control. Sir E. Ray Lankester, as we find, treats the subject from the side of Biology. He tells us of the triumphs of the Biologist over the Parasites which give rise to most of the diseases from which men, animals, and plants suffer. He shows how Man

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is gradually and steadily bringing them under control.

We ourselves deal with Man's control from another side, namely, from the Engineer's side of the matter. From this side we see Man getting control, not merely over the Parasites which affect us, but over the energies of Nature by which the Universe itself has been built—it shows Man as getting control over the Builders of the Universe and also over Matter, out of which as a building material the Universe has been built.

Sir E. Ray Lankester's book, as we view it, brings out the fact that a lesson in control is being forced upon Man, by the lash in the shape of scourges of Parasites. Speaking of Man's restlessness, he says that Parasites in themselves, beneficent purifiers of the race, have been thus converted into terrible scourges.

"The parasite," he says, "and much of its nature and history, has been discovered in the case of splenic fever, leprosy, phthisis, diphtheria, typhoid fever, glanders, cholera, plague, lock-jaw, gangrene, septic poisoning (of wounds), puerperal fever, malaria, sleeping-sickness, and some other diseases, which are fatal to man.

"In some cases the knowledge obtained has led to a control of the attack, or of the poison-

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ous action of the parasite. Antiseptic surgery, by defeating the poisonous parasite, has saved, not only thousands upon thousands of lives, but has removed an incalculable amount of pain. Control is slowly being obtained in regard to several others among these deadly microbes in various ways. . . . But why should we be content to wait long years, even centuries, for this control, when we can have it in a few years? If more men and abler men were employed to study and experiment on this matter, we should soon make an end of all infectious disease" (*The Kingdom of Man*, p. 38).

We are shown, as it seems to us, Man as being taught a lesson of control, under the lash of suffering. We are shown, as it seems to us, more especially by the parasite of syphilis, Man as being taught under the lash that he has got to control not only the wild things about him but also the wild within him, his own wild desires. We are shown Man as being taught a lesson in the same way as the sheep-dog and the horse are taught their respective lessons, namely, by the lash. We are shown incidentally the meaning of much of the suffering which is in the world.

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We are shown that suffering compels our attention.

We are shown the lesson Man has got to learn, and we are shown how this lesson is being forced upon his attention.

We remember that in regard to Parasites Mr. Herbert Spencer has told us that "with the conception of two antagonist powers which severally work good and evil in the world the facts are congruous enough" (*Principles of Biology*, revised edition, vol. i. p. 429). For our part, therefore, we discern behind the Parasites and behind the Parasite of Syphilis more clearly than behind any other the Master with a lash.

CHAPTER VI

FALLING AWAY

WHEN we study Man's career in History, we find a record of a succession of falls. We find the Egyptian falling away, the Israelite falling away, the Greek falling away, the Roman falling away, and so on. We find a dreary record of falls.

We find a succession of rises, followed each by a fall. If we run our eye over the pages of History, we shall perceive that there is nothing new in such a spectacle as that which is engaging our attention now.

There is nothing new in coming upon Man as in the act of falling away after making a rise.

But the case with which we are now dealing seems to be remarkable, because as we hold it shows us the worst fall Mankind has ever had following hard upon the greatest rise Mankind has ever made.

There is one comforting fact about this dreary monotony of falls, and that is the fact that Man has never lost heart and despaired. He has gathered himself together after each fall, and

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later on made a fresh rise, and each rise has carried him up a little higher.

He has slowly but steadily gained ground.

If we keep full in view the greatness of the rise Man made under the Anglo-Saxon in getting control by his machinery over Heat and thus over a part of the great energies of Repulsion,—which once, as the Nebular Theory of Astronomy tells us, scattered in confusion through Space the whole stock of Matter of which all the great suns and stars before us are made up, and if uncontrolled would scatter it again,—we shall not be greatly surprised with the pages of History before us at the greatness of the fall which followed hard upon it; or at the fact that the fall came about under the Anglo-Saxon.

In studying the great fall which now demands our close attention, we find that Darwin put Evolution in its right place. He shows it as coming immediately after Creation. "There is," he says, "grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one" (*Origin of Species*, 6th edition, p. 429).

He says also, "I believe that animals have descended from, at most, only four or five progeni-

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tors, and plants from an equal or lesser number ” (*Ibid.* 1st edition, p. 484).

Thus Darwin shows the Creator as working in the world for a time, and then ending his work and making it over to Natural Selection for completion.

Darwin therefore clearly recognised that Creation preceded Evolution.

Darwinism therefore, as taught by Darwin, recognised that Organic Evolution reveals the work of a Creator as underlying Evolution.

But we find, for our part, that Inorganic Evolution reveals the work of a Creator also.

It may be remembered that in *Man's Position in the Universe* we pointed out very fully in Chapters II and III that the Periodic System of Chemistry shows that the atoms, with which Inorganic Evolution deals when it puts atoms together to form molecules and molecules together to form masses—shows that these atoms have all undergone alteration to fit them for purposes of Evolution.

The Periodic System shows unmistakably as we hold that the atoms dealt with by Inorganic Evolution have all been prepared for purposes of Evolution from pre-existing atoms with which Evolution is unable to deal—have all been

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prepared from these pre-existing atoms with which Evolution is unable to deal by altering these pre-existing atoms in ways which affect their weight.

The pre-existing atoms with which Evolution is unable to deal are the atoms of the inert gases Helium, Neon, Argon, Krupton and Xenon, and others not yet isolated, or like Sir William Ramsay's *Niton* not yet sufficiently studied. The atoms of these inert gases, if placed under close confinement and subjected to pressure and cooled, can be condensed into masses, but no molecules can be built with them, and no building work can be done with them by Evolution. They can be used to fill in the spaces between the buildings of Evolution, but not for building work.

The Periodic System of Chemistry shows that the atoms of these inert gases, with which no molecules can be built by Evolution, have been taken in hand and converted into atoms with which molecules can be built.

They have been taken in hand, and converted on the one hand into metal atoms such as those of Magnesium, Aluminum, etc., with which we are familiar, or on the other hand into non-metal atoms such as those of Sulphur, Phosphorus, Carbon, etc., with which we are familiar. They

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have been converted into non-metal atoms by removing one portion or more than one portion from them, and thus reducing their weight, and they have on the other hand been converted into metal atoms by putting one piece or more than one piece on to them and thus adding to their weight.

Very orderly and very beautiful is the procedure thus disclosed to us.

We are shown the atoms of these inert gases which can take no other atom on to them, taken in hand and cut down and made into non-metal atoms which can take one atom on to them in molecule building. Then we find some of these atoms taken in hand a second time, and once more cut down and made into non-metal atoms which can take two atoms on to them. Then we find some of them taken in hand a third time, and a third time cut down and formed into non-metal atoms which can take three atoms on to them in molecule building. Lastly we have some of them taken in hand a fourth time, and a fourth time cut down and made into non-metal atoms which can take four atoms on to them.

The Periodic System shows no atom taken in hand more than four times.

Again we are shown the atoms of these inert

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gases, which can take no atom on to them until they undergo alteration—we are shown some of the atoms of these inert gases as being taken in hand and having each one piece put on to them, one seat for an atom, and being thus converted into metal atoms which can take one atom on to them in molecule building.

Then we are shown some of them as being taken in hand a second time and having a second seat put on to them, and being thereby converted into metal atoms which can take two atoms on to them in molecule building.

Then we are shown some of them as being taken in hand a third time and having a third seat put on to them, and being thus converted into metal atoms which can take three atoms on to them in molecule building.

Lastly we are shown some of them as being taken in hand a fourth time and having a fourth seat put on to them, and being thereby converted into metal atoms which can take four atoms on to them in molecule building.

We find no metal atom taken in hand more than four times, neither do we find, as shown above, any non-metal atom taken in hand more than four times.

Thus we are shown the atoms of the inert

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gases, with which no building work can be done by Evolution, as undergoing conversion into atoms with which building work can be done.

We are shown, in fact, the atoms of the inert gases as undergoing alteration and being converted, on the one hand by putting raised seats upon them and thus adding to their weight, into metals atoms of four different kinds; and on the other hand by cutting them down to form depressed seats upon them into non-metal atoms of four different kinds.

We are shown the inert gases as giving rise each to a family of four metals and four non-metals.

In the Table at p. 174a we are shown the inert gases each with its family of four metals and four non-metals, with the single exception of Helium which has a family of four metals only, and no non-metals in its family.

We are shown the atoms of the inert gases with which no building work can be done, as being taken in hand by the Creator and converted into atoms suitable for building purposes.

Very wonderful in their simplicity and very orderly are the operations of the Creator as they are revealed to us in the Periodic System of Chemistry.

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The illustration at the front of the book is an attempt to represent these operations pictorially to the mind. It makes an attempt to show by diagram Neon, with its family of four metals and four non-metals about it. It will be noticed that Neon atoms are represented as perfect spheres with which no building work can be done because of their rolling tendencies and because all atoms put on to them will necessarily roll off from them.

It will be noticed also that the atoms of the substances derived from the Neon atoms, whether these substances are metals or whether they are non-metals, are represented as imperfect spheres and therefore atoms which cannot roll as freely as atoms in the form of perfect spheres can do. They have been converted into imperfect spheres by having flat places made upon their surfaces either by cutting down their surfaces or by building up on their surfaces flat-topped projections.

Imperfect spheres can come to rest themselves on these flat places and likewise other atoms with flat places can come to rest upon them.

If they have one flat place they can come to rest in one position, likewise one other atom with a flat place and only one can come to rest

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upon them; if they have two flat places there will be two positions in which they can come to rest and two seats on which other atoms with flat places can come to rest upon them, and so on. Thus the number of flat places upon an atom will determine the number of atoms which can come to rest upon it.

We hold, therefore, that the Periodic System of Chemistry shows convincingly that the valent atoms, the atoms of the metals and of the non-metals with which Evolution deals, are created things, and bears eloquent testimony to the fact that Creation preceded Evolution and thus shows also that Darwin was right in his conclusion that Creation preceded Organic Evolution.

Now we find that when Darwinism is put in its proper place, in the place which Darwin himself assigned originally to it, and is shown as coming immediately after Creation, it affords, as we have already pointed out, very strong support to the narrative in the Bible.

The Bible repeatedly tells us that the Creator worked for six days at Creative work and then broke off and rested on the seventh day. The Bible says that "on the seventh day God ended His work which He had made; and He rested on

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the seventh day from all His work which He had made" (*Genesis* ii. 2).

But Darwinism, as taught originally by Darwin himself, gives us practically, as we find, the same account also. It tells us that the Creator made a few forms of life, both of the plant kind and of the animal kind, and then ended His work and made it over to Natural Selection for completion.

Darwinism thus in its proper place clears up a very obscure passage in the Bible.

It shows us how the world of life was able to go on developing itself by Natural Selection after the Creator's operations came to an end.

Darwinism shows us also that the Bible gives us an exact explanation, even though its explanation is altogether anthropomorphic in character. It was, as we conclude, necessary to use anthropomorphic terms in order to make the account intelligible to men in the childhood of the world. Nevertheless the manhood of the world puts forth the same explanation, only in different language.

Therefore, Darwinism in its proper place affords the strongest support to the Bible.

We find thus that Darwin was quite right when he said, in regard to the greatest of his

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books, *The Origin of Species*, that, "I see no good reason why the views given in this volume should shock the religious feelings of any one" (*Origin of Species*, 6th edition, p. 421).

Hence Darwinism, if it had been left in the form in which Darwin originally presented it, would, we conclude, most certainly have been assimilated in course of time and recognised as throwing much light upon the narrative in the Bible and affording strong support to it by showing what went on after the Creator ended His work which He created and made.

Unfortunately, it came before the world at a time when a bitter conflict was raging in this country between Religion and Science.

The scientific controversialists soon saw, as we may safely assume, that Darwinism, showing as it does a world of life developing itself in the absence of a Master, would furnish them with a powerful lever to overthrow the case of Religion if they shifted the point of application.

A strut which supports a building can, if it is taken out and applied differently, be turned into a powerful lever to overthrow the building.

That is practically what was done in the case of Darwinism.

Darwinism, as originally stated by Darwin,

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supplemented, as we find, the account of Creation which the Bible gives, and as we have seen furnished a strong support to it.

But Darwinism as stated by the Evolutionists completely overturned the Bible. They put forward, as we find, Evolution as a substitute for Creation. Then they gave Evolution universal application with the help of Mr Herbert Spencer's conception of "alternate eras of Evolution and Dissolution," "the conception of a past during which there have been successive Evolutions analogous to that which is now going on; and a future during which other such Evolutions may go on" (*First Principles*, 5th edition, p. 587). Thus, as we find, they put forward Evolution with a Master so far away as to be absolutely unknowable as furnishing an explanation not only of the Origin of the Universe but also of present-day conditions, and an explanation which shocked the religious convictions of almost everyone, overturned the Bible, and, with it, Christianity.

There are two ways of stating Darwinism. There is Darwin's way, in which it supplements the account of Creation given in the Bible and affords strong support to that account and through it to Christianity. And there is the way

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adopted by the Evolutionists of giving it a wider application and putting it forward as a substitute for Creation, and also as giving a complete explanation of present-day conditions, and thereby overturning the Bible and doing away with Christianity by substituting an unknowable Master for the known Master shown to us by Christianity. We know now, as we have just been pointing out, from the facts which the Periodic System of Chemistry shows us that the Universe originated by Creation and not by Evolution. We now know that Creation preceded Evolution.

We know also from Science that Man by Nature is an animal pure and simple. And since Man is plainly not a wild animal but a tame animal, and since a tame animal is an animal which has come under a Master's training, we know now that Man has a knowable Master and not an unknowable Master such as the Evolutionists imagined.

Darwin pointed out the importance of studying domestication. "In this," he says, "and in all other perplexing cases, I have invariably found that our knowledge, imperfect though it be, of variation under domestication, afforded the best and safest clue. I may venture to ex-

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press my conviction of the high value of such studies, although they have been very commonly neglected by naturalists" (*Origin of Species*, 1st edition, p. 4).

We may therefore quote Darwin's authority for the course we took in using in Part I of this book the case of the sheep-dog to throw light upon the obscure problem of Man's civilisation.

We therefore find on the whole that the Evolutionists overthrew the Bible and fell away from Christ quite blindly and unnecessarily and in the face of Darwin's expressed opinion that he saw "no good reason why the views given in" the *Origin of Species* "should shock the religious feelings of any one" (*Origin of Species*, 6th edition, p. 421).

We find also that they fell away from Christ in the hour of His triumph when He had just succeeded in training Man in ways of controlling energy of Repulsion by the use of Machinery so as to compel the wild energies of Repulsion to co-operate with energies of Attraction in the erection of buildings instead of breaking buildings down and scattering the materials in them as it is the wont of energies of Repulsion to do.

This triumph, by which a part of the wild energies of Repulsion are brought over under

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control to the side of the energies of Attraction and compelled to co-operate with energies of Attraction in the erection of buildings, manifestly gives, as we have already pointed out, energies of Attraction an advantage in their struggle to ingather the atoms and put them away in the form of buildings so as to safeguard them from the wild efforts of energies of Repulsion to carry the atoms off and scatter them. If we remember that Science shows us by the Nebular Theory of Astronomy that the wild energies of Repulsion succeeded once in carrying off the atoms and completely scattering them throughout Space; if we remember also that Mr Herbert Spencer has shown us that energies of Attraction and energies of Repulsion are so evenly matched that in the ordinary course energies of Repulsion will get possession of the atoms again and carry them off and scatter them as before and that the prospect before us is “ . . . now an immeasurable period during which the attractive forces predominating, cause universal concentration, and then an immeasurable period during which the repulsive forces predominating, cause universal diffusion—alternate eras of Evolution and Dissolution ” (*First Principles*, 5th edition, p. 587) ; if we keep these points well in

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view we shall understand how vast and how far-reaching is the triumph which Christ has gained by getting control through Man of a part of the energies of Repulsion and compelling them to co-operate with energies of Attraction instead of opposing energies of Attraction.

This triumph gives energies of Attraction an advantage so great that when it is sufficiently improved and extended by increasing the number of Men employed and giving those employed sufficiently enhanced powers, it will as we hold be enabled to complete its work of ingathering and render forever impossible the further alternations of eras of Evolution and Dissolution with which the Universe was threatened.

We shall understand then how complete is the triumph which Christ has gained. We shall understand also how complete was the blindness which led the Evolutionists to fall away from Christ in the hour of His triumph.

CHAPTER VII

THE MASTER

WE have endeavoured to show in Part I of this work, p. 217, that two Masters have dominion over us, that we are swayed by two Masters, the two Masters revealed to us by the Bible—the Master Christ and the Master Satan.

We have drawn attention at p. 26 of our present book and elsewhere to some of the remarkable stage whispers, if we may so call them, which Mr Herbert Spencer from time to time lets fall, and which seem to us to show clearly that he was not wholly satisfied with the view he was putting forward in his Philosophy. One of the stage whispers to which we refer was let fall in connection with the subject of the suffering and harm caused by Parasites. "With the conception," he says, "of two antagonist powers which severally work good and evil in the world, the facts are congruous enough. But with the conception of a supreme beneficence, this gratuitous infliction of pain is absolutely incompatible" (*Principles of Biology*, vol. i. p. 429, revised edition).

If we take this in connection with another of

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his stage whispers, in which he tells us that “ the necessity we are under to think of the external energy in terms of the internal energy gives rather a spiritualistic than a materialistic view of the Universe ” (*Principles of Sociology*, vol. iii. p. 178) ; and take it in connection with yet another stage whisper in which he tells us that “ we cannot decide between the alternative suppositions, that phenomena are due to the variously-conditioned workings of a single force, and that they are due to the conflict of two forces ” (*First Principles*, 5th edition, p. 228) ; and then remember that he has told us that “ we are obliged to regard every phenomenon as a manifestation of some Power by which we are acted upon ” (*Ibid.* p. 99), and also that “ a Power . . . works in us certain effects . . . the most general of which we class together under the names of Matter, Motion, and Force ” (*Ibid.* p. 557), we shall recognise that “ a conflict of two forces ” brings us straight by Mr Herbert Spencer’s own showing to a conflict of two Powers.

Putting these remarkable stage whispers together, the conclusion is forced upon us that Mr Herbert Spencer himself got in the course of his Philosophy, at least on one occasion, a

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glimpse of the two Masters, Christ and Satan, who are revealed to us in the Bible, and got a glimpse of them at work in the world.

For our part, we cannot believe that these strange stage whispers, savouring so strongly as they do of the views of the early Christians, and subverting so completely as they do the views of modern Christianity, can have been let fall accidentally.

They go, as we hold, far to show that we have to deal with a Spiritual Universe and with two Spiritual Masters who are in a state of antagonism. They put, as we hold, a wholly different complexion upon the face of the case which Mr Herbert Spencer puts before us in his Philosophy. We gather, therefore, from Mr Herbert Spencer's stage whispers that there is a way of putting the case for Evolution so that it will support the teaching of the early Church and not clash with it. We remember that Darwin himself said that he could "see no good reason why the views given in" his *Origin of Species* "should shock the religious feelings of any one" (*Origin of Species*, 6th edition, p. 421).

We conclude, therefore, that Evolution would not have been put forward in such a way as to

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overthrow Religion if there had been at the time no conflict raging between Religion and Science.

We conclude also from Mr Herbert Spencer's stage whispers that the views put forward in his Philosophy are those of the men with whom he was associated and not altogether his own views.

We know now that Evolution is put in a wrong place in Mr Herbert Spencer's Philosophy.

We know now, as we have before pointed out, from the discovery that inert gases exist with which no building work can be done by Evolution that Creative work was done upon the atoms of Matter and that they were shaped so as to fit them for building purposes before they were taken in hand by Evolution.

We know also from the Nebular Theory of Astronomy that the atoms of Matter were taken in hand by energy of Repulsion and all scattered in confusion throughout Space before Evolution got to work upon them through energy of Attraction. We know therefore that Evolution did not originate the Universe, and in fact did not come in at all until comparatively late in the day.

We can see from the fact that Natural Selec-

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tion deals with the Origin of Species that its proper place is at the Dawn of Life.

We can see from the many great forms of Life, which Palaeontology shows us as having been once in existence, and from the many great forms which Biology shows us as being still in existence, that Natural Selection had a free hand once when these great forms of Life were out-turned.

And we can see from the fact that the wild things which were out-turned by Natural Selection are fast disappearing and giving place to Man's flocks and herds and plantations, and thus to Tame life developed by Human Selection, that Natural Selection has no freedom now. We can see that if Natural Selection is operating now, it is only operating amongst the lowliest forms of life.

We can see that Natural Selection has no place now, such as it had at the Dawn of Life.

We find that even Darwin could not show that Natural Selection is in operation now, although he could show very clearly that Human Selection is in full operation.

He tells us that: "The principle of Natural Selection may be looked at as mere hypothesis,

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but rendered in some degree probable by what we positively know of the variability of organic beings in a state of nature . . . and from the analogical formation of domestic races" (*The Variation of Animals and Plants under Domestication*, popular edition, vol. i. p. 10).

Again he says: "Can the principle of Selection, which as we have seen is so potent in the hands of man, apply under nature? I think we shall see that it can act most efficiently" (*Origin of Species*, 6th edition, p. 62).

Again he says: "It is, therefore, of the highest importance to gain a clear insight into the means of modification and co-adaptation. At the commencement of my observations it seemed to me probable that a careful study of domesticated animals and of cultivated plants would offer the best chance of making out this obscure problem. Nor have I been disappointed; in this and in all other perplexing cases I have invariably found that our knowledge, imperfect though it be, of variation under domestication, afforded the best and safest clue" (*Origin of Species*, 1st edition, p. 4).

It is quite clear, therefore, that Darwin recognised that Tame life is very much in evidence to-day and is able to give very valuable assist-

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ance in clearing up puzzling questions in regard to Life.

When we do question Tame life in regard to the place of Evolution, the answer it gives is perfectly clear and definite. For it brings us at once to a Master whose Will can be clearly known and understood. And since civilised man manifestly belongs to Tame life and not to Wild life, and has been shown by Science to be by nature an animal pure and simple, it is plain that we, too, belong to a Master Who has taught us and trained us and revealed His Will and Ways to us.

Hence Tame life tells us that the world as at present constituted, with a Master present and working, is no proper place for Organic Evolution, which belongs to a time when the Master was far away and was resting. It shows us that the place of Organic Evolution is where Darwin put it at the Dawn of Life, when, as the Bible tells us, "God ended His work which He had made and rested on the seventh day from all His work which He had made" (*Genesis* ii. 2). Evolution, as we hold, took up the work where the Creator laid it down, and carried it on until Man appeared with his domesticated animals and cultivated plants, with

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his clearances and thinned forests, with his plantations in which trees and plants were set out at regular intervals, giving each the full amount of room it required, and with his pastures occupied by tame animals restricted in number to the number the land would carry.

There is no struggle for existence in plantations where plants and trees are each given the full amount of room it requires for perfect development, and weeds are kept down; neither is there any struggle for existence amongst herds and flocks when each animal is allowed the full amount of pasture land it requires for its sustenance. The day of Evolution was over when Man took possession of the land. With Man in occupation, Organic Evolution has no proper place, has at best only a very subordinate position amongst microbes or other lowly forms of life.

Our conclusion is, therefore, that if the Evolutionists had followed Darwin in bringing Natural Selection in to supplement and not supersede the work of Creation, and if they had followed Darwin in closely studying Tame life, they would have found that Evolution has its proper place in the Bible narrative in which it affords strong support to the Bible, and could

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never have used it as they did to overthrow the Bible and do away with Christianity. We find that in the heat of conflict with Religion, they put Evolution forward as a substitute for the Creation theory of the Bible, and thus overthrew the Bible, and they put Evolution forward with its Master far distant and unknown, as giving an explanation of the conditions which now obtain in the world, and thus overthrew Christianity. They triumphed indeed, but it was, as we now know from the latest discoveries of Science, a party triumph, and not a triumph of light and of truth.

It was, as we find, a case in which a good thing was put to bad uses by being misapplied. It was a case in which a strong support was taken out of its proper place and used as a lever to overturn.

We note that it represented a tremendous blow to Christ's Kingdom amongst men. Almost all civilised people were affected by it, and were more or less completely detached from Christ's side. And it was all, as we now know, a gigantic mistake. We know now from the discovery of inert gases that the Universe arose by Creation, and we know from Tame life that we have a Master—a knowable Master. To

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understand the case fully we must consider the time at which it occurred.

We notice that it came at a time when Christ had just delivered a great blow at Satan's Kingdom over energies of Repulsion by teaching men, through the Anglo-Saxon, how to get, through Machinery, control of energy of Repulsion and compel energy of Repulsion to help in putting up buildings by collecting the materials required for these buildings and depositing them in the places where they were wanted. Energy of Repulsion had previously been engaged constantly and continuously in pulling down buildings and scattering the materials of which they were composed. It was, in fact, by energy of Repulsion that the whole stock of atoms of Matter contained in the Universe was once scattered in confusion and diffused throughout Space, as the Nebular Theory of Astronomy tells us. And it was, as we gather, by energies of Repulsion that Satan intended to prevent the last stage of Evolution, namely, the putting together of the materials in all the suns and stars into one great crowning Edifice, from being effected. The prospect before the Universe as pointed out by Mr Herbert Spencer seems to us a very dreary one. The prospect was, that the

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perfect completion of the last great stage of Evolution would be made impossible by the opposition of energies of Repulsion.

Mr Herbert Spencer brings forward the work of Professor v. Helmholtz.

He tells us that: "In his essay on 'The Interaction of Natural Forces,' Professor Helmholtz states the thermal equivalent of the Earth's movement through space, as calculated on the now received datum of Mr. Joule. 'If our Earth,' he says, 'were by a sudden shock brought to rest in her orbit,—which is not to be feared in the existing arrangement of our system,—by such a shock a quantity of heat would be generated equal to that produced by the combustion of fourteen such Earths of solid coal. Making the most unfavourable assumption as to its capacity for heat, that is, placing it equal to that of water, the mass of the Earth would thereby be heated 11,200 degrees; it would therefore be quite fused, and for the most part reduced to vapour. If then the Earth, after having thus been brought to rest, should fall into the Sun, which of course would be the case, the quantity of heat developed by the shock would be 400 times greater'" (*First Principles*, 5th edition, p. 527).

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Mr Herbert Spencer goes on to tell us that “already we have seen that were the Earth arrested, dissipation of its substance would result. And if so relatively small a momentum as that acquired by the Earth in falling to the Sun, would be equivalent to a molecular motion sufficient to reduce the Earth to gases of extreme rarity; what must be the molecular motion generated by the mutually-arrested momenta of two stars, that have moved to their common centre of gravity through spaces immeasurably greater? There seems no alternative but to conclude, that it would be great enough to reduce the matter of the stars to an almost inconceivable tenuity—a tenuity like that which we ascribe to nebular matter” (*First Principles*, 5th edition, p. 583).

Mr Herbert Spencer goes on to say that: “If stars concentrating to a common centre of gravity, eventually reach it, then the quantities of motion they have acquired must suffice to carry them away again to those remote regions whence they started. And since, by the conditions of the case, they cannot return to those remote regions in the shape of concrete masses, they must return in the shape of diffused masses” (*Ibid.* p. 584).

He adds that: “Apparently the universally

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coexistent forces of Attraction and Repulsion . . . produce now an immeasurable period during which the attractive forces predominating cause universal concentration, and then an immeasurable period during which the repulsive forces predominating cause universal diffusion —alternate eras of Evolution and Dissolution. And thus there is suggested the conception of a past during which there have been successive Evolutions analogous to that which is now going on; and a future during which successive other such Evolutions may go on" (*Ibid.* p. 587).

The whole case with its alternate eras of Evolution and Dissolution suggests to us strongly the need of better control and the need of a Master's supervision. If we came across anything like that in the country here, if we came across a Farmer's men and carts bringing in the Farmer's corn from his fields and carefully making it up into ricks and then pulling down the ricks and carrying off the corn and scattering it over the fields again, we should begin to make enquiries about the Farmer concerned. We should not consider it a satisfactory explanation if we were told that the Farmer had gone off and was allowing the men to do as they liked, and that

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the men wanted to go on earning harvest wages and were having a succession of harvests over the same crop. We should think very badly of the Farmer as well as of the men.

In fact, we should not, as we have pointed out already in the Introduction, tolerate such a state of things if it existed even for a single season upon Earth.

And we allege that we have no right to accept any explanation as sufficient, which represents, as obtaining for countless ages in the Universe, a state of things which would be intolerable if it existed for a single season upon Earth. We have, as we hold, evidence that this explanation of alternate eras of Evolution and Dissolution was held to be sufficient, for we find Professor Huxley putting it forward as subverting the teaching of the Bible in regard to a coming Millennium.

“The theory of evolution,” said Professor Huxley at the end of the Romanes Lectures in 1898, “encourages no millennial anticipations. If, for millions of years, our globe has taken the upward road, yet, some time, the summit will be reached and the downward route will be commenced” (*Evolution and Ethics*).

For our part, we hold, as we have just pointed out, that we have no right to accept as sufficient

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an explanation which represents as obtaining for millions of years in the Universe a state of things which would be intolerable if it existed for a single season upon Earth, and, so holding, we look further into the matter.

And when we look further, we begin to think that the case is eminently one in which millennial operations are required.

Millennial operations have to do, as we notice, with the binding of Satan and with an increase of control for a thousand years, and they precede the construction of the new Heavens and the new Earth.

We notice also that the increase of control is to be got by the employment of men—"they lived and reigned with Christ a thousand years" (*Revelation xx. 4*).

We hold, for our part, that operations such as these meet the wants of the case.

We hold that our experience in harvesting operations and the fact that by effective control we prevent corn from being harvested several times over, and allow no such thing as a succession of harvests with one and the same crop, go to show that the true remedy for a succession of Evolutions in the Universe is to be found in the provision of better control and supervision.

We hold, therefore, that millennial opera-

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tions on a sufficiently extensive scale meet the wants of the case.

And we think that this view occurred to Professor Huxley himself; for we notice that after remarking that, "If, for millions of years, our globe has taken the upward road, yet, some time, the summit will be reached and the downward route will be commenced," he goes on to say, "The most daring imagination will hardly venture upon the suggestion that the power and the intelligence of man can ever arrest the procession of the great year" (*Evolution and Ethics*, closing remarks).

He would never, as it seems to us, have given utterance to an idea such as this if he had thought that there was absolutely nothing in it. Therefore we think that he must have had some notion that there was a possibility that Man might have something to do with the case.

Here the blindness of the Evolutionists once again forces itself upon our notice.

It seems to us that they altogether failed to see the absolute superiority of the Master's way over their way. Their way led to the complete failure of Evolution, the Master's way pointed to the complete success of Evolution. Their way led them to expect "now an immeas-

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urable period during which the attractive forces predominating, cause universal concentration, and then an immeasurable period during which the repulsive forces predominating, cause universal diffusion—alternate eras of Evolution and Dissolution" (*First Principles*, 5th edition, p. 537).

Thus their way led them to look for failure on the part of the energies of Attraction to bring about permanent concentration, and likewise to failure on the part of energies of Repulsion to bring about permanent diffusion. Therefore, with their way, they could point to nothing but absolute and complete failure—failure on both sides.

Their way offered nothing but complete failure. Their way offered neither permanent peace nor rest nor joy nor hope.

In this connection we remember that Mr Herbert Spencer came himself in the end to see that rational interpretation is a failure, it fails he says and fails the more the more it seeks (*Autobiography*, vol. ii. p. 471).

On the other hand, the Master's way pointed to the complete success of Evolution, pointed to a new Heaven and a new Earth, and thus to another and a final stage of Evolution. It

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pointed to a new Jerusalem, to a permanent building replacing the temporary buildings of the present stage of Evolution, and to a city, and thus to a building made by Man, and thus to the complete success of Evolution achieved by the help of Man.

And there was before them evidence of the reasonableness of it all.

If they had studied Tame life as Darwin, as we have seen at p. 146, bid them do, they would have found evidence that Man is coming to the help of Evolution. They would have seen Man diligently engaged in analysing Matter of all sorts and kinds. They would have seen Man taking all compounds to pieces and analysing them into their constituent atoms. Then they would have seen Man, under the great German Synthetic Chemists, diligently studying ways and means of putting the atoms together again, and attaining marvellous success even with complex organic compounds.

They would have seen Man diligently engaged in enlarging his powers both of body and mind, intent on fitting himself for a wider sphere of operations.

They would have seen him successfully capturing and controlling by his Machinery the

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wild energies of Repulsion, the great foes of Evolution.

We have great admiration for the leaders of the Evolutionist party and for the help they have given us by giving us Evolution. But we can have no love for their party in their party zeal, if, as we believe was the case, they forced in a blind party spirit their leaders to go to extremes they would not have resorted to if they had been left to themselves and to misuse Evolution in the way, as it seems to us, they did.

For our part we think that while the case for Evolution is as strong and sound and good as ever, the case for the Evolutionists is completely collapsing, and that the time has come now for doing away with it and reviewing the whole situation. Let us listen again to Professor Huxley: "When I was a member of the London School Board," says Professor Huxley in a letter to Mr Edward Clodd, "I fought for the retention of the Bible, to the great scandal of some of my Liberal friends, who can't make out to this day whether I was a hypocrite, or simply a fool, on that occasion" (*Life of T. H. Huxley*, by Leonard Huxley, vol. ii. p. 273).

CHAPTER VIII

THE SITUATION

EVOLUTION tells us of progress—it tells us that a better world than this is coming.

In the first Chapter we endeavoured to make it clear that preparation is being made, inasmuch as harvesting operations are going on in the Universe corresponding to the harvestings which go on upon the Earth.

The things harvested upon the Earth are mainly different kinds of grain; the things harvested in the Universe are the atoms. We know that in the harvests of the Earth the ears or stalks of corn are harvested by a succession of stages. The order is stalk to stalk to form sheaves, sheaf to sheaf to form stooks, stook to stook to form wagon-loads, wagon-load to wagon-load to form ricks. In the harvesting operations of the Universe the order is atom to atom to form molecules, molecule to molecule to form masses or meteorites, meteorite to meteorite to form solar systems, solar system to solar system to form a Milky Way or condensation of solar systems.

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Put in that way there is no mistaking the correspondence between the two harvests.

There is, as it seems to us, no room for doubting that the Farmer in getting in his harvests by stages is not working on any ideas of his own, but on an idea which has been in the Universe from the beginning. The Farmer is, in fact, shown to be under training in the ways of Evolution in his daily work here. Atoms are clearly shown in this way, as it seems to us, to be building materials.

Now we notice that Clerk Maxwell in a Lecture at the Bradford Meeting of the British Association put this idea, namely, that atoms are building materials, very strongly before the British Association.

“ But though,” he said, “ in the course of ages catastrophes have occurred and may yet occur in the heavens, though ancient systems may be dissolved and new systems evolved out of their ruins, the molecules out of which these systems are built—the foundation stones of the material universe—remain unbroken and unworn. They continue this day as they were created—perfect in number and measure and weight, and from the ineffaceable characters impressed upon them we may learn that those aspirations after

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accuracy in measurement, truth in statement, and justice in action, which we reckon among our noblest attributes as men, are ours because they are essential constituents of the image of Him who in the beginning created, not only the heavens and the earth, but the materials of which heaven and earth consist" (*Scientific Papers of James Clerk Maxwell*, edited by Niven, vol. ii. p. 377).

This was manifestly a noble presentment of conclusions based upon the noble discoveries made and noble work done by Chemistry, but it was too noble for the men of Clerk Maxwell's day. They violently assailed it, as we find.

We gather that their main objection was grounded on the fact that the weights which Chemistry assigns to the atoms are only average weights, arrived at by making in each case a large number of determinations and taking the mean of these determinations, and make no pretension to absolute exactness. But if we remember that the Chemist is driven to take average weights instead of exact weights, by the fact that he is unable to get wholly rid of the impurities which are associated with all materials and can never isolate any substance in a perfectly pure

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condition, we shall not attach much importance to this objection.

Manifestly the fact that the presence of impurities prevents the Chemist from making exact weighments, and obliges him to take the mean of a number of determinations from samples obtained in different ways, so that deficiency in weight caused by the presence of impurities light in weight may be balanced to some extent by the presence of impurities heavy in weight in other samples, in no way makes it impossible or even improbable that the atoms themselves should be exact in weight; while, at the same time, the order and precision running through the Periodic System manifestly suggest exactness in all respects as obtaining amongst the atoms.

It is, or at all events until quite recently it used to be, said that Religion was good for women and children but was not needed by hard-headed men. Well, here we have the hardest-headed man, as we may safely say, in all the band of Scientists who attended that meeting of the British Association standing up and openly giving in his adhesion to Religion and publicly confessing his Master and Maker.

In Kepler, Newton, Leibnitz, Dalton, Fara-

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day, Pasteur, we have other hard-headed men who acknowledged their need of Religion. In fact, Science can show no harder-headed men than these, as we may safely say.

However, this is not the point in connection with Clerk Maxwell's remarks on that occasion which concerns us closely, important as it is.

We are much more closely concerned at present with the fact that the ideas which Clerk Maxwell thus put forward in regard to molecules were largely those which Newton had formulated in regard to atoms.

Newton said that, "it seems probable to me, that God in the beginning formed Matter in solid, massy, hard, impenetrable, movable particles, of such sizes and figures, and with such other properties and in such proportion to space, as most conduced to the end for which He formed them; and that these primitive particles, being solids, are incomparably harder than any porous bodies compounded of them; even so very hard, as never to wear or break in pieces" (*Opticks*, 8d edition, pp. 875, 876).

Clerk Maxwell's views were also evidently based in part on Faraday's work.

Faraday found that, "a particle of oxygen is ever a particle of oxygen—nothing can in the

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least wear it. If it enters into combination and disappears as oxygen,—if it pass through a thousand combinations, animal, vegetable, mineral,—if it be hid for a thousand years and then be evolved, it is oxygen with its first qualities, neither more nor less" (*Experimental researches in Chemistry and Physics*, p. 454).

Clerk Maxwell's noble ideas were therefore not immature or ill-considered or hurriedly put forward, but were ideas which had been long under consideration and were well and carefully grounded.

If it is objected that the Physicists are showing that the atoms are not the stable things that Newton, Faraday, and Clerk Maxwell took them to be, but can be transmuted as when, for example, Radium atoms are transmuted into atoms of Radium A, Radium B, etc., we would simply remark that the Physicists are not, as it seems to us, sufficiently on their guard against the impurities which misled the Alchemists. In fact, we think it possible that the transmutations of to-day may, like the transmutations of the Alchemists in the past, turn out to be impurities.

One point in regard to them which we wish to make is that the noble case which Clerk Maxwell thus put forward has been vastly strength-

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ened since his day by Mendeleeff's work on the Periodic System on the one hand, and by the discovery of the inert gases on the other hand.

Mendeleeff's work showed that if the atoms are viewed by their relative weights, as Dalton taught Chemists to view them, a wonderful order obtains amongst them. The Periodic System shows that there are two classes of atoms; one of them, comprising the atoms of the inert gases, consists of atoms with which no molecules can be built and therefore consists of atoms useless for building purposes; while the other, comprising the atoms of the valent elements, as they are called in Chemistry, consists of atoms with which molecules can be built.

The Periodic System further shows that the atoms of the valent elements, that is to say the atoms with which molecules can be built, are of four kinds, namely, one kind called Monovalent or one valent, in which a single atom can have one other atom put on to it and normally only one; a second kind called Divalent or two valent, with which a single atom can have two other atoms put on to it; a third kind called Trivalent or three valent, with which a single atom can have three other atoms put on to it; and a fourth kind called Tetravalent or four valent, with

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which a single atom can have four atoms put on to it. Now, keeping in view this fact that atoms of the valent elements or in other words the atoms with which molecules can be built are of these four kinds, the next point to notice is that the Periodic System shows that the atoms form series, each series consisting of four atoms, and each containing amongst the four atoms of which it is composed one atom of each of the above four kinds; so that each series consists of one atom which takes on four other atoms in molecule building, of one atom which takes on three other atoms, of one atom which takes on two other atoms, and of one atom which takes on one other atom only.

The Periodic System is by no means complete, and there are many anomalies in it which await explanation, but it is so nearly complete that there is no room for doubting that it will be ultimately completed and will be seen to be unquestionably one of the most marvellous discoveries which Science has made. If the fact is remembered that the Periodic System takes us down to the foundations of the Universe, it will perhaps be recognised that it is well worth while to make an effort to get into our heads the main facts which it shows regarding atoms, and in

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particular the four kinds of atoms which it shows, namely, the one valent atoms which take on one other atom, the two valent which take on two other atoms, the three valent which take on three, and the four valent which take on four. Keeping these four kinds of atoms well in view, let us go back to the Periodic System. It will then be apparent that the Periodic System is made up of the series referred to above, each of which consists of four atoms and each of which contains one atom of each of the four kinds and that these series are simply repeated over and over again on a different scale of weight each time. It begins with a series of atoms of relatively low weight, namely, Lithium one valent, Beryllium two valent, Boron three valent, and one other, a four valent, not as yet isolated, with atoms weighing respectively 7, 9, 11 and 18, and goes on to other series which gradually increase in weight until a series is reached which is composed of Gold one valent, Mercury two valent, Thallium three valent, and Lead four valent, with atoms weighing respectively 197, 200.5, 204, 206. It is impossible to suppose that such an arrangement, so orderly and so regular and so precise, has come about accidentally by any fortuitous concourse of atoms.

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But this is by no means all. On looking closer we perceive that the series of which the Periodic System consists are of two sorts: we perceive that in some of the series the atom of the one valent kind has the highest weight of any atom in its series; the atom of the two valent kind comes next below it in order of weight, the atom of the three valent kind comes next in order of weight below the atom of the two valent kind, and finally the atom of the four valent kind comes in at the bottom of the series as the atom which has the lowest weight of all.

This is a remarkable arrangement, showing plainly gain of valency or of the ability to take on other atoms attended with loss of weight.

The fact that gain of valency or ability to take on atoms is attended with loss of weight will be apparent at once by a glance at one of these series. The first of these series in the Periodic System runs thus: Fluorine, one valent, with ability to take on one atom, weight 19; Oxygen, two valent, with ability to take on two atoms, weight 16; Nitrogen, three valent, with ability to take on three atoms, weight 14; Carbon, four valent, with ability to take on four atoms, weight 12.

The other sort of these series runs in exactly

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the opposite way, inasmuch as it shows gain of valency attended with gain of weight. This can be seen at once by a glance at the first series of this sort in the Periodic System. It runs thus: Lithium, one valent, with ability to take on one atom, weight 7; Beryllium, two valent, with ability to take on two atoms, weight 9; Boron, three valent, with ability to take on three atoms, weight 11; with one substance not isolated as yet, Tetravalent, or four valent, able to take on four atoms, weight 18.

One remarkable fact about these two sorts of series is that the atoms belonging to series of the first sort, namely, the sort with which gain of ability to take on atoms is attended with loss of weight, are all non-metal atoms, while the atoms of series of the other sort, namely, the sort with which gain in ability to take on atoms is attended with gain of weight, are all metal atoms.

Thus the Periodic System is made up of a number of series of non-metal atoms with ability to take on atoms gained by loss of weight and a further number of series of metal atoms with ability to take on atoms gained by gain of weight.

Here there comes in another very remarkable

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fact, and that is that each of the non-metal series, in which the atoms have gained their ability to take on atoms by losing weight, is directly connected with a series of metal atoms which have gained their ability to take on atoms by gaining weight. Thus the Periodic System shows a number of paired series in which a series of non-metal atoms with ability to take on atoms gained by loss of weight is paired with a series of metal atoms which have gained their ability to take on atoms by gaining weight.

The suggestion, of course, occurs to us at once that the loss of weight by which atoms of the non-metal series gain ability to take on atoms is caused by the fact that non-metal atoms are cut down to make seats in the form of depressions or hollows upon them, in which other atoms can sit safely, and the gain of weight by which metal atoms gain ability to take on atoms is caused by raised seats being put upon them; also that the material removed from non-metal atoms in making these depressed seats upon them has been put on to the metal atoms with which they are paired, in order to make the raised seats upon them on which other atoms can sit.

At this stage another most remarkable fact comes in, and this is the fact that these pairs of

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series of valent atoms, or atoms with ability to take on other atoms, each and all hang upon one or other of the recently discovered inert gases which have atoms unable to take on other atoms. The suggestion naturally occurs to us that the atoms of these inert gases are unable to take on other atoms simply because they have no depressions or prominences on their surfaces upon which other atoms can rest, and are in fact perfectly spherical in form; and that these spherical atoms have been cut down at one or more places to convert the atoms of the inert gases into non-metal atoms with depressed seats, or built up at one or more places to form metal atoms with raised seats in which other atoms can sit.

At all events the Periodic System shows that each of the inert gases, Helium, Neon, Argon, Krypton and Xenon, has given rise on the one hand to a series of four non-metal atoms and on the other hand to a series of four metal atoms.

The Periodic System bears out this view completely, except only in the case of Helium, which has given rise to a series of four metal atoms but has not given rise to any non-metal atoms.

We are thus shown that with the single exception of Helium, which has given rise to a series of four metal atoms only, each of the inert gases

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has given rise to a family composed of four non-metal and four metal atoms.

The illustration at the front of the book shows the inert gas Neon with its family of four non-metal and four metal atoms.

The Table at p. 174a shows the families each composed of four non-metal and of four metal atoms, to which the four other inert gases have given rise.

The Periodic System is imperfect, owing, as we have already seen, to the presence in each and every substance of impurities which cannot wholly be got rid of, and which make exact weighments impossible. Nevertheless, it is wonderful in its regularity and orderliness, so wonderful, in fact, that we can already, in spite of the haze of impurities which prevents us from getting a clear view of the atoms, get a glimpse of atoms perfect in number and measure and weight. The atoms can thus be shown to be created things, things on which work has been done to fit them for building purposes.

But if there are thus shown to be good grounds for concluding that atoms are perfect in number and measure and weight, then there are plainly good grounds also for the conclusion that the molecules which are built of these

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atoms are likewise perfect in number and measure and weight.

We have seen at p. 10, in the first Chapter, that Mr Herbert Spencer stated that: "We have a veritable revelation in Science—a continuous disclosure, through the intelligence with which we are endowed, of the established order of the Universe. This disclosure it is the duty of everyone to verify as far as in him lies; and having verified, to receive with all humility."

We see now that Clerk Maxwell agreed in effect with Mr Herbert Spencer in holding that in Science we have a disclosure of the established order of the Universe. At the same time, we find Clerk Maxwell reading the revelation very differently from the way in which Mr Herbert Spencer read it. For we find that Clerk Maxwell saw in the established order of the Universe a disclosure of the Hand of a Master creating and directing, while Mr Herbert Spencer, if we understand him rightly, could see nothing but Evolution and Dissolution uncontrolled.

Now we find that the discoveries of Science are bringing Clerk Maxwell's views to the front.

In Part I. of this book, we endeavoured to show that the Master's Hand could be discerned in His work, upon ourselves in raising and

Table showing the inert gases with the family composed of four non-metals and four metals derived from each.

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training us—in fact by our civilisation. We have here Clerk Maxwell showing us that the Master's Hand can be discerned by His work upon the atoms in accurately shaping and preparing them for building purposes. Clerk Maxwell in fact, as we find, alleges that the Master is to be judged by His works and thus by much the same standard as that which He Himself gave us when He said, “By their fruits ye shall know them.”

The gist of the matter is that we have atoms shown to be the building materials of the Universe—the bricks, so to speak.

These are the things which are being got together in the form of stars and suns and planets and moons and meteorites.

These are the things which are being harvested, which are being collected and brought in by energies of Attraction from a previous state of diffusion into which they had been brought by being scattered in confusion throughout space by energy of Repulsion.

We have got two successive eras, one, to use Mr Herbert Spencer's description, an era in which “repulsive forces predominating” produced universal diffusion, and another “era in

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which attractive forces predominating" are producing universal concentration.

We have got the atoms which once were in a state of diffusion now undergoing concentration. We want to know about the forces of Attraction, or, as they are called now by Science, energies of Attraction, by which the atoms are being brought in, and also about the forces of Repulsion or energies of Repulsion by which the atoms were previously scattered.

Radio-activity promises to give us a complete account of them.

We ourselves endeavoured to do some work with them in *Argon and Newton, a Realization*, published in 1896.

We found then that phenomena revealed the fact that in addition to inert atoms of unchanging form there were, in existence in the Universe, active bodies of two kinds, which were of the same order of minuteness as atoms, but could travel at speeds exceeding the velocity of light and were able to change their form.

Science has since come in and shown by Radio-activity that in addition to inert atoms of Matter there are in the Universe active bodies of two principal kinds, of which one kind, forming alpha radiations, are comparable with

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Helium atoms in minuteness, while the other kind, forming beta radiations, are far smaller than Hydrogen atoms and are able to travel at speeds comparable with the velocity of light.

There is already clear evidence that the bodies which produce beta radiation are connected with heat and therefore with Repulsion; and there is some evidence that the relatively large bodies which produce alpha radiations are connected with Attraction. But whether they are the bodies to which our conclusions point or no, there is little room for doubt, that if Repulsion is due to the activity of minute bodies, Attraction is due to the activity of minute bodies also, and that the bodies which give rise to Attraction will be found in course of time even if they are not at present known.

Let us keep in mind the fact that, according to our view, we require, as explained in *Argon and Newton* and in our other books, minute bodies not only in the shape of hard, inert, unalterable atoms to form the bricks of the Universe, but also others in the form of active bodies able to attach themselves to the atoms and to change their own form and to move with speeds comparable with the velocity of light. We want two kinds of these active bodies, one kind which

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draw together and work together in collecting atoms to explain Attraction, and another kind which keep apart from each other and compete with each other in scattering atoms to explain Repulsion.

We have got in Chemistry atoms in the shape of minute, inert, unalterable bodies for the bricks of the Universe, and in Radio-activity we have minute, active bodies able to attach themselves to atoms and to move with velocities comparable with the velocity of light. And we have got two kinds of these active bodies. We have got one kind, namely, beta particles, invariable in mass and therefore, as we conclude, bodies which keep apart and do not unite to form large masses. These explain Repulsion on the view that their invariability in mass shows that they keep apart and compete with each other and with other active bodies for the possession of atoms, and in fact are shown to be connected with heat and therefore with Repulsion. In the other kind, namely, alpha particles, we are shown relatively large bodies of variable mass and therefore, as we may assume, bodies which draw together and unite to form relatively large masses. With inert atoms furnishing bricks for the Universe and with alpha and beta particles furnish-

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ing active bodies able to lay hold on atoms and, as shown by the phenomena of ionisation, able to set atoms in motion, we are coming, as we hold, very near to a real explanation of the Universe—to an explanation on Newtonian principles.

Newton's work is, as we think, undoubtedly coming to the front now, and Newton's ideas.

Any way, we hold that it is now clear that the Universe at large is the scene of a great ingathering of building materials. If we turn our attention upon the Earth, we see Man hard at work almost all over the habitable surface of the Earth, busily engaged in clearing the ground for his crops or plantations.

The noble forests are rapidly disappearing and being replaced by crops of cereals or by plantations of fruit trees or other trees useful to Man.

The graceful wild animals and lovely birds are gone or are only lingering under the protection of game laws or regulations. The Bison and Antelopes in their millions are nearly gone and are being rapidly replaced by herds and flocks of Man's ungainly but useful tame animals and birds.

In fact the day of the wild animal is over. The wild animal is given over to destruction.

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Science tells us in Geology that there was once a Saurian Age on this Earth of ours—Lizards of sorts great and small, creeping or flying, swarmed over the face of the Earth. But after a time they disappeared, apparently somewhat mysteriously, and gave place to the wild mammals and birds. And now the wild Mammal and the wild Bird are disappearing before the advance of the tame Mammal and tame Bird, an advance which is being organised by the tamed Mammal—civilised Man.

The present age is the age of Tame life, and since taming represents the operations and influence of a Master and reveals the Master, the Revelation of Natural Science to-day is the Revelation of a Master.

The Master thus revealed is manifestly the same Master as Clerk Maxwell recognised as being the Maker, not only of the Universe but also of the materials of which the Universe consists, and as being shown through civilised Man to be just in action, accurate in measurement, truthful in statement.

It is marvellous that this stupendous change, which is being brought about by Tame life in spreading all over the world and displacing and

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destroying wild life or allowing it to live only on sufferance, should attract so little attention.

The whole habitable surface of the Earth is being overspread by Tame life, by civilised Man and his tame flocks and herds. Nothing like it has ever been seen before on the Earth. It is impossible to misunderstand its meaning. It proclaims the close of Evolution, it tells of the advent of a Master, it tells of the coming doom of all who walk wildly, of all who follow their own will and walk in their own ways and refuse to submit to the Master.

It means a peremptory call to all to change their ways and turn to the Master. The Master's words, "Take my yoke upon you and learn of Me," are ringing through the world to-day.

It tells of the end of Evolution, of the coming of the Master, of the doom of the wild.

Mr Herbert Spencer has told us, as we have already seen at p. 10, that "we have a veritable revelation in Science—a continuous disclosure, through the intelligence with which we are endowed, of the established order of the Universe. This disclosure it is the duty of every one to verify as far as in him lies; and having verified, to receive with all humility" (*First Principles*, 5th edition, p. 20).

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Now we allege that no one who looks about him can fail to discern that civilised men and the tame animals belonging to them are, and thus Tame life is, to-day, swarming upon the Earth, while Wild life in its large forms is becoming extinct or is only to a large extent allowed to live on sufferance.

And no one, we allege, can fail to see that the advent of Tame life means the advent of a Master.

Therefore we again allege that the revelation which Science gives us to-day is the revelation of the Master and His order, and we allege that this revelation can be verified even by the feeblest intellect. Mr Herbert Spencer's call is peremptory. It calls all who can verify and makes no reservation, and since the feeblest minds can verify the fact of the passing away of the Wild and the incoming of the Tame, it calls all. It may be asked, Is there any other sign of the Master's advent?

Well, the precursors of Science, the Magi, discovered by their observations a sign of the Master's First Advent. Having discovered the sign, they went straight to the Master's own people to find out all about Him. If we do the same, if we go to the Master's own people, His



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Church which He founded on the twelve Apostles, they will tell us that there is no possibility of doubt as to the Master's Second Advent being due. We shall find that there are many signs that His coming is near.

There is one remarkable sign. It is said: "The Spirit speaketh expressly that in the latter times some shall depart from the faith" (*I. Timothy*, iv. 1), and again, "that day shall not come until there come a falling away first" *II. Thessalonians*, ii. 8). There can be no possibility of doubt that Agnosticism represents a falling away and a departure from the faith. Therefore there can be no possibility of doubt as to the fulfilment of this sign.

CHAPTER IX

A SUMMARY OF CONCLUSIONS

WE think that the whole case of Evolution can be cleared up now.

We are beginning now to see the strong points of it; and we are beginning to see also the mistakes which have been made in connection with it. We find that there are two ways of stating the case for Evolution.

There is Darwin's way, if we may call it so, in which, as we find, Evolution forms an exceedingly strong support to Religion, and there is the way of the Evolutionists, in which it overthrows all religious knowledge.

We find that much depends upon the place assigned to Evolution.

We know that a great baulk of timber may be used as a strut to support and shore up a building, or it may be applied at the base of the building and used as a great lever to overthrow the building.

Much depends upon the place of application.

It is just so, as we find, with Evolution.

Darwin originally brought Natural Selection in, as we find, immediately after Creation; he



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brought it in so as to supplement and carry on the work of the Creator.

Darwin tells us that "there is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one" (*Origin of Species*, 6th edition, p. 429).

He says also, "I believe that animals have descended from at most only four or five progenitors, and plants from an equal or lesser number" (*Ibid.* 1st edition, p. 484).

Thus we find that Darwin recognised that Creation preceded Natural Selection.

Now we find that when Natural Selection is brought in so, it affords strong support to the account of Creation which the Bible gives us. It throws much light upon a very obscure passage in the narrative which we have in the Bible and which is repeated several times in one form or another.

The Bible tells us that, "on the seventh day God ended His work which He had made; and He rested on the seventh day from all His work which He had made" (*Genesis* ii. 2).

Natural Selection comes in to show us what went on on the seventh day when the Creator was resting. It shows us that Life was able to de-

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velop itself in a wild way by Natural Selection when the Creator was resting. We are thus shown by Evolution that an account, which seems at first sight to give us a very anthropomorphic explanation, is still a correct account in homely language.

Natural Selection, therefore, in the place in which Darwin put it, affords strong support to the Bible. We find that Evolution affords strong support to the Bible in another way also.

The Bible tells us that this world of ours is only a temporary building; it tells us that the present Universe is only a temporary arrangement; it tells us of a better world to come.

And Evolution also tells us of a better world to come. Evolution shows us that Matter, which in the form of atoms was once, as the Nebular Theory of Astronomy tells us, scattered in confusion throughout Space, is now being ingathered by a succession of stages. We are shown atom put to atom to form molecules or groups of atoms; we are shown molecule put to molecule to form masses or meteorites; we are shown meteorite put to meteorite to form solar systems, the suns and the stars of the present Universe. There is one stage wanting in this ingathering. The stage wanting is solar system to solar sys-

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tem to form a great crowning Edifice, in which the whole stock of Matter, at present temporarily put up in the form of suns and stars and planets and meteorites, will be used up in making one vast new building. We are shown by Evolution a better world to come. And in the Milky Way, consisting, as Astronomy tells us it does, of a condensation of millions of suns and stars, we have, as we conclude, before us evidence that preparation for the next and last stage of Evolution is far advanced, if not complete.

We find, therefore, that Evolution strongly supports the statements in the Bible in regard to the origin and coming end of the world.

But what of the present day, it may be asked? Does not Natural Selection, with its ability to work in the absence of a Master, or with a Master so far off as to be unknowable, upset Christianity with its doctrines in regard to a knowable Master? The answer is emphatically "No." Christianity and Natural Selection, as originally presented by Darwin, belong to different ages in the World's history. They do not clash at all.

Let us call to mind Darwin's statement on the subject.

In regard to Natural Selection, he said in the greatest of his books, the *Origin of Species*, "I

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see no good reason why the views given in this volume should shock the religious feelings of any one" (*Origin of Species*, 6th edition, p. 421).

We find for our part that Darwin was quite right. We remember that Darwin bade us look to Tame life for an explanation in perplexing cases in regard to Life.

"At the commencement of my observations," Darwin said in regard to means of modification and coadaptation, "it seemed to me probable that a careful study of domesticated animals and of cultivated plants would offer the best chance of making out this obscure problem. Nor have I been disappointed; in this and in all other perplexing cases I have invariably found that our knowledge, imperfect though it be, of variation under domestication, afforded the best and safest clue. I may venture to express my conviction of the high value of such studies, although they have been commonly neglected by naturalists" (*Origin of Species*, 1st edition, p. 4).

If we take Darwin's advice and turn to Tame life in the present difficulty, we get an answer immediately and quite unmistakably. We are brought at once to the feet of a Master whose Will and whose Ways are quite clearly revealed. We are shown Wild life, the beautiful and grace-

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ful wild things which were developed by Natural Selection, all being driven out and destroyed, or only allowed to live on sufferance under the protection of game laws or under forest laws.

We are shown that this is not the day of Natural Selection and its wild things, but the day of a Master and of His tame things, namely, civilised Man and his flocks and herds.

There is no possibility of mistaking or misunderstanding the answer which Tame life gives. It tells us that this is not the day of Natural Selection; it shows us that if Natural Selection is operating at all now, it is only operating amongst lowly forms of life. It tells us that Natural Selection has had its day, the day when it turned out the multitude of wild things which Geology and Biology reveal, and that that day is over. Natural Selection has given place to a Master. And since we ourselves are shown by Science to be animals pure and simple by Nature, and since it is quite clear that we are not wild animals but tame animals, Tame life tells us that we also belong to a Master whose Will and whose Ways are revealed.

And since we are at the head of Tame life, it tells us that this is the day of our Master, the

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Master Christ, and not the day of Natural Selection.

Thus we find that Evolution, when stated in the way Darwin presented it originally in the *Origin of Species*, affords strong support to the Bible as well in its teaching in regard to the origin of the Universe as in its teaching in regard to the end of the Universe, and in regard to Christianity. That is one way of putting the case for Evolution. But there is, as we have seen, another way of stating the case for Evolution.

There is the way of the Evolutionists. They put forward, as we find, Evolution as a substitute for Creation; and they put forward Evolution with its unknowable Master as a substitute for Christianity. Thus they used Evolution to overthrow the Bible with its teaching in regard to a Creator and with its teaching in regard to Christ.

Thus we see that there are two ways of using Evolution. It can be used so as to support and confirm our religious knowledge, or it can be used so as to overthrow all our religious knowledge.

There is no question here in regard to Evolution itself. It is the same Evolution which

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supports the Bible in the one case and overthrows it in the other. The question is where does Evolution come in? Does Evolution come in after Creation, as Darwin supposed, and simply carry on the work already begun by a Creator, and thus support and confirm the teaching of Religion in regard to a Creator? Or does it completely supersede Creation, as the Evolutionists suppose, and thus overthrow the teaching of the Bible in regard to Creation?

Now we to-day are in a position to decide finally as to which of these two ways of using Evolution is the right one. We know now that Darwin was right. We know that the Universe originated by Creation as the Bible tells us, and not by Evolution as the Evolutionists supposed. We know now that creative operations preceded Evolution. This is shown unmistakably, as we hold, by the discovery that inert gases exist, and that each has its proper place in the Periodic System of Chemistry. These inert gases are, as pointed out in p. 166 and repeatedly elsewhere, materials with which no building work can be done. They can be used to fill in the intervals between the buildings which Evolution puts up. They can be used for filling in the spaces between the molecules and the masses and the solar

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systems which Evolution builds, but no buildings can be put up with the atoms of these inert gases. Their atoms have to undergo alterations which affect their weight by increasing it or reducing it, and be converted either into metal atoms with increased weight or into non-metal atoms with reduced weight before any building work can be done with them.

When these inert gases, Helium, Neon, Argon, Krupton, and Xenon, with atoms with which no building work can be done, are put each into its proper place in the Periodic System of Chemistry, it then becomes apparent that each has about it a family of atoms with which building work can be done—each has a family consisting of four metal atoms derived from it by making additions to its weight and of four non-metal atoms derived from it by cutting down its weight, with the exception only of Helium, which has four metal atoms in its family but no non-metal atoms.

Table 1 at page 174a shows these inert gases each with its family of metal and non-metal atoms about it.

The Diagram at p. 1 attempts to give a correct pictorial representation of the atoms of the inert gas Neon with its family of four metal

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atoms and of four non-metal atoms about it.

The Periodic System indeed is so marvellous in its orderliness, dealing as it does with things so minute that they are totally invisible even under the most powerful microscope, that one is forced to recognise that it is not possible to dwell upon it too much.

But it sets at rest finally and for ever the question of the origin of the Universe. It shows finally and incontestably, as we hold, that the Universe originated by Creation, as the Bible tells us, and that the Evolutionists were wrong in putting forward Evolution as a substitute for Creation. The Evolutionists are thus, as we hold, clearly shown to be wrong in putting forward Evolution as a substitute for Creation. But now comes the far more important question. The Evolutionists were wrong about Creation, were they also wrong about Christ? Were the Evolutionists wrong in putting forward the unknowable Master, which Evolution shows us as a substitute for the present and known Master Christ revealed to us by Christianity?

We have already replied to this question, but the question is so important that it may be well to amplify our reply. We follow Darwin's ad-

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vice and go to Tame life, to domesticated animals and cultivated plants, for an answer, and we find that the answer Tame life gives us is perfectly clear and decisive. It tells us, as we have seen above, that the day of Natural Selection is over. It shows us that the Wild life which was out-turned by Natural Selection in its own day is fast disappearing from the Earth. It has been reduced to a state of domestication or has been relegated or restricted to certain areas or reserves, where it exists in a semi-domesticated state under the protection of game or forest laws, or has been absolutely exterminated, or, if not exterminated, so thinned and reduced in numbers that it can do little harm; or it has otherwise been brought under control.

This is no day of Natural Selection, but the day of a Master. A Master is much in evidence in connection with all or almost all forms of Life to-day, and inasmuch as we ourselves manifestly are a form of Tame life, just as much as our domesticated animals are, the Master who stands revealed by Tame life to-day is our Master, the Master Christ.

Christ to-day is getting not only through Man all the wild things of this world, all the wild things which were out-turned by Natural Se-

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lection brought under Him, brought into subjection, but He is getting also the wild things of the Universe, the wild energies of Repulsion, brought under control through Man with his Machinery.

Evolution with its wild things does not clash with Christianity and its Tame life. The Wild prepares the way for the Tame.

Natural Selection is a thing of the past, its out-turn of Wild life is all being brought under control and prevented from reasserting itself by Man's clearances and thinned forests, where trees and plants are allowed the full amount of room each requires for perfect growth and weeds are kept down and there is no struggle for existence. Neither is there any struggle for existence amongst Man's herds and flocks, limited as they are in number to the number the land will carry. Thus Natural Selection has no proper place in the world of to-day, in a habitable world covered with Man's clearances, cattle-runs, farms, plantations, and thinned forests.

The answer returned by Tame life is clear and decisive. This is not the day of Natural Selection. This is the day of a Master. The Master's day and the day of Natural Selection

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belong to different ages in the history of the World.

Thus we find that the Evolutionists in sheer blindness used Evolution to overthrow Christianity, just as in sheer blindness, as we have seen above at p. 198, they used Evolution to supersede Creation. To understand the case fully, we must look back and see where it comes in.

Viewing, as we must, this falling away from Christ as the work of the Anglo-Saxon, we see that it comes in just after the Anglo-Saxon had successfully initiated a great rise on the part of Mankind by which Man who, through the Egyptian, had gained control over Matter and learnt how to employ it in the construction of great buildings, now learnt from the Anglo-Saxon how to get, by Machinery, control of energy of Repulsion and employ it in the erection of buildings.

Mankind had already got control over the wild things of the Earth, and was employing some of them in bringing in materials to the sites of great buildings. Mankind was using horses and asses and oxen and camels and elephants in carts or as pack animals in bringing in materials to the sites where the materials were wanted for the erection of great buildings.

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Man had got, through the Egyptian with his horses, control over the wild things of the Earth and was using them in putting up great buildings. Man now got through the Anglo-Saxon with his Machinery control over the wild things of the Universe, over the wild energies of Repulsion which had once, as the Nebular Theory of Astronomy tells us, scattered the whole stock of Matter in the Universe; scattered the whole stock of Matter of which all the suns and stars in Space have been built up, in wild confusion throughout Space, and still is continually resisting and hampering the energies of Attraction in their work of building the suns and the stars, and only waiting for an opportunity of pulling down the buildings and scattering Matter once again.

Man had just learnt through the Anglo-Saxon with his Machinery how to capture and bring under control the wild things of the Universe, the wild energies of Repulsion, and compel them to assist in doing work which in their wild state they were intent on undoing.

Consider what a feat this was! It not only changed completely the status of Humanity, but also elevated it and ennobled it, and enabled it to draw itself together and do great works with

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ease, which could only be done under great difficulties before, but it also changed completely the outlook for the Universe. By capturing energies of Repulsion, and compelling them under control to assist energies of Attraction in doing building work, and thus bringing over energies of Repulsion to the side of energies of Attraction and turning them away from their former rôle in which they were engaged in pulling down buildings to a new rôle in which they were employed in assisting energies of Attraction in putting up buildings, the old balance between energies of Attraction and energies of Repulsion was upset.

This old balance between energies of Attraction and energies of Repulsion would, unless it had been upset, have resulted, as Mr Herbert Spencer showed, in the establishment of an order of "alternate eras of Evolution and Dissolution." "Now an immeasurable period during which the attractive forces predominating, cause universal concentration, and then an immeasurable period during which the repulsive forces predominating, cause universal diffusion" (*First Principles*, 5th edition, p. 587).

The outlook would have been dreary indeed.

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The balance has been upset. Energies of Attraction have been strengthened by having a portion of the energies of Repulsion brought under control and brought over to their side, and been given thereby such an advantage that they will, as we conclude, now be able to complete finally and for ever the work of Evolution by using up the materials in all the great suns and stars in the erection of one great crowning Edifice.

Energies of Repulsion, captured and brought over to the side of energies of Attraction and compelled to co-operate with energies of Attraction in doing building work, turn the scale in favour of Evolution, and give Evolution an advantage which can be increased to any extent necessary to consummate the final triumph of Evolution by simply making more captures. Consider what a blow this was to Satan, resulting as it has done in the capture of part of his hosts of wild energies of Repulsion, and leaving as it does a gap in his line which cannot be filled up, but will get wider and wider as time goes on and more captures are made. It makes, as we conclude, Satan's position completely untenable in the Physical Universe. When the

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movement thus begun is sufficiently extended, Satan will be completely dislodged and driven out.

We may call to mind here Christ's own words when He said, "I beheld Satan as lightning fall from Heaven" (*Luke* x. 18). We may remember that this remark was made after He had been told by His disciples of their success in getting control over devils. We may call to mind also the passage in *Revelation* xii. 7-9, which runs thus, "And there was war in heaven: Michael and his angels fought against the dragon; and the dragon fought and his angels and prevailed not; neither was their place found any more in heaven. And the great dragon was cast out, that old serpent, called the Devil, and Satan, which deceiveth the whole world."

We conclude that the end is certain to come now. We conclude that Christ has won a decisive victory through the Anglo-Saxon. We see Christ delivering through the Anglo-Saxon a fatal blow at Satan's dominion over the wild energies of Repulsion.

Well, this is the time, this hour of Christ's triumph won through the Anglo-Saxon is the very time selected by the Anglo-Saxon for falling away from Christ, the very time selected for

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making the great falling away from Christ which we have been dealing with at the beginning of this Chapter.

This blind falling away from Christ came, not in the hour of failure, not in the hour of defeat, but it came in the hour of Christ's triumph, it came in the full tide of victory.

This is, as it seems to us, the most extraordinary fact about this extraordinary case.

Christ had just given through the Anglo-Saxon a fatal blow at Satan's dominion over the wild energies of Repulsion. Immediately Satan turned and delivered through the Anglo-Saxon a tremendous blow at Christ's dominion over Men, whereby Satan succeeded in detaching from Christ almost the whole of civilised Mankind.

We have seen that Men fell away from Christ quite unnecessarily, in fact altogether under a mistake made in complete blindness.

Satan has been compelled to expose his hand. Satan had been lying *perdu* and inducing men to believe that there was no such Personality in existence. He stands before us here fully revealed as a mighty blinding Power, as a mighty Deceiver.

The gain to Satan by this move was plainly a

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gain of time. Satan cannot turn back this move by which Christ has made a gap in Satan's defences. Christ's ultimate triumph is certain to come now. Christ's final triumph cannot be averted, but it can be retarded if Christ's following by which the triumph will be won can be detached from His side.

So Satan sets to work and succeeds in detaching through the Anglo-Saxon, through the very Men by whom Christ's triumph was being won, the whole of civilised Mankind, or almost the whole.

Mr Herbert Spencer, as it seems to us, got a glimpse of two antagonist Powers severally working good and evil in the world through Parasitism "with the conception," he says, "of two antagonist powers which severally work good and evil in the world, the facts are congruous enough" (*Principles of Biology*, vol. i. p. 429, revised edition).

We have got here, as we conclude, a full view of these same two antagonist Powers severally working good and evil in the world through the Anglo-Saxon.

And since the whole civilised world has taken to the use of Machinery and thus become Anglo-Saxon, we perceive that Science confirms the ac-

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count which Religion gives us when it tells us that Man takes part in a conflict between the two great antagonist Powers, Christ and Satan, which extends throughout the Universe and is carried on by them through their respective Agents.

We are come, as we conclude, very near to the close of the conflict to-day. A gap has been made in Satan's line of defence by the capture of a part of his wild following. Satan's position will not be tenable when the successful movement thus begun is developed. Satan will inevitably be dislodged from his position in the Physical Universe.

But Satan has replied very effectively for a time by detaching from Christ's side the attacking party by whom this decisive victory was won for Christ. This great falling away on the part of Christ's hosts seems at first sight to turn the tables completely. There is one remarkable point about it, however. The falling away was expected. It was foretold in the plainest way according to our version of the New Testament. In that version we are told in regard to the day of Christ that "*that day shall not come, except there come a falling away first*" (*II. Thessalonians, ii. 3*).

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We are told also that “ the Spirit speaketh expressly, that in the latter times some shall depart from the faith ” (*I. Timothy*, iv. 1).

Thus we see that a great falling away was expected and foretold, and thus was foreseen. Since this falling away was foreseen, we may safely assume that it has been provided for, and that adequate provision has been made. It will delay, but not prevent, Christ’s final triumph.

With Satan’s gapped line before us, we conclude that nothing can now avert Christ’s final triumph, the perfect completion of the last great stage of Evolution, the great ingathering stage in which the materials now distributed over millions of suns and stars will be compacted and used up in the construction of one vast Edifice. We conclude that all contingencies have been provided for, all possible causes of failure foreseen.

We see that Christ is our rightful Master. He needs us and has work for us to do—work of the highest importance both for the welfare of Mankind and for the welfare of the Universe.

If we look closely into Evolution, we can scarcely fail to see that in addition to the stages of integration or concentration, which Evolution puts before us when it shows us atom put

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to atom to form molecules or grouped atoms, molecule put to molecule to form masses or meteorites, meteorite to meteorite to form solar systems, there remains one more stage to complete the integration of matter, and that stage is solar system to solar system to form one great permanent building, replacing the millions of temporary buildings which are now before us in the Physical Universe in the shape of suns and stars. Matter which, in the form of atoms, was at the beginning completely scattered in wild confusion throughout Space, as the Nebular Theory of Astronomy teaches us, will then be completely ingathered. All chance of collisions will then be over. A permanent arrangement will then be reached and a Day of Rest ushered in.

Mr Herbert Spencer saw, as we find, clearly that this stage is wanting. "When," he says, "that integration everywhere in progress throughout our Solar System has reached its climax, there will remain to be effected the immeasurably greater integration of our Solar System, with other such systems" (*First Principles*, 5th edition, p. 586).

But he could not, as we find, see how any permanent arrangement could be reached thereby.

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“ If stars,” he says, “ concentrating to a common centre of gravity, eventually reach it, then the quantities of motion they have acquired must suffice to carry them away again to those remote regions whence they started. And since, by the conditions of the case, they cannot return to those remote regions in the shape of concrete masses, they must return in the shape of diffused masses ” (*Ibid.* p. 584).

What he sees is a succession of Evolutions and Dissolutions, “ alternate eras of Evolution and Dissolution ” “ . . . now an immeasurable period during which the attractive forces predominating, cause universal concentration, and then an immeasurable period during which the repulsive forces predominating, cause universal diffusion ” (*Ibid.* p. 587).

For our part we see that the situation will be as Mr Herbert Spencer shows it, provided that there is no control over it. We see that the true remedy is to bring in proper control.

We see that if the wild energies of Repulsion, or “ repulsive forces ” as Mr Herbert Spencer calls them, are brought under control and compelled to co-operate with the energies of Attraction, or “ attractive forces ” as Mr Herbert Spencer calls them, in bringing about and main-

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taining universal concentration, then " alternate eras of Evolution and Dissolution " will no longer be possible. We reach a permanent arrangement in which Matter will remain permanently concentrated in one vast building.

We conclude that Mr Herbert Spencer's Philosophy puts before us the necessity of getting control over the wild energies of Repulsion.

And we find that Christ is engaged in the present time in getting the necessary control over these wild energies of Repulsion, and is getting it by the Anglo-Saxon with his Machinery.

We find that Christ is not only training Man through the Anglo-Saxon with his Machinery in ways of getting control over energies of Repulsion, but is also training Man through the great German Chemists, with their wonderful success in synthesis, is training Man in ways of taking Matter to pieces and putting it together in various ways. Christ is thus training Man, as we conclude, for the work which lies before him in taking to pieces the great Solar Systems and putting the materials obtained from them together in the formation of that new world, that vast final structure to which Evolution points.

We conclude that Christ's preparations are

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nearly complete, that all necessary provision is being made, and that His final triumph is now certain and imminent.

In any case we perceive that Christ has need of us, and that Man is a factor of great importance and of increasing importance.

At the same time we can see quite clearly and certainly that civilised Man is a rebel against Christ's order of Evolution. Civilised Man has been from the first busily engaged in destroying the products of Evolution with his fires of different kinds—fires for cooking food, fires for warming himself, fires for smelting ores and forging tools and weapons, fires for making clearances in the forests for crops of sorts. With his fires Man has been busily engaged from the beginning in destroying the forests which Evolution has been busily engaged in rearing up, and now civilised Man is busily engaged in destroying the great beds of coal which Evolution prepared from the forest trees and put away carefully deep in the Earth.

And then civilised Man, with his clearances and farms and plantations, and cattle and sheep-runs, is busily engaged in getting rid of Wild life, in getting rid of the trees and plants and animals and birds which were out-turned by

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Evolution, and is replacing them by his cultivated plants and trees and by his domesticated animals and birds, which could not hold their own at all without Man's constant care and protection. With Man's crops and plantations and thinned forests, and with his herds and flocks, in which each plant and animal is given the full amount of room it requires for full development, and over-crowding is prevented, there is no struggle for existence such as Natural Selection requires, and Natural Selection is allowed no freedom for its operation. And since Man's clearances and farms and plantations and thinned forests are rapidly extending and covering the habitable surface of the Earth, Natural Selection is rapidly coming to an end, if it has not already come to an end.

Man in all this is clearly shown to be a rebel.

Again, Man is, as we are shown by Science, an herbivorous animal by nature. Man has got, as pointed out at p. 44, the large intestine of the herbivorous animals, of the sheep and the rabbit, and not the intestine of carnivorous things. Man has neither the teeth nor the claws nor the talons of carnivorous things. Man is not armed by Nature for taking life. And yet he has turned himself into a carnivorous animal. Man has

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taken upon himself in rebellion the rôle of a carnivorous animal.

In all this Man is shown to be a rebel against Evolution. Sir Ray Lankester has, as we find, in his book *The Kingdom of Man*, pointedly drawn attention to the fact that Man is a rebel here. "This, is indeed," he says, "the definite purpose of my discourse; to point out that civilised man has proceeded so far in his interference with extra human nature, has produced for himself and the living organisms associated with him such a special state of things by his rebellion against natural selection and his defiance of Nature's pre-human dispositions, that he must either go on . . . or perish miserably . . ." (*The Kingdom of Man*, p. 81).

In this, as well as in other passages, Sir Ray Lankester clearly points out that civilised Man is a rebel.

If the case is looked into, therefore, we find that there is no possible room for doubt as to the fact that civilised Man, with his fires by which he destroys the forests, and the coal-beds, and with his fire-arms by which he destroys the wild animals and birds, is on the side of Dissolution and is rapidly making an end of Organic

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Evolution, and replacing by Tame life the Wild life, out-turned by Organic Evolution.

There is no possible room for doubt, as we find, that civilised Man is a rebel, against the present stage of Evolution and is on the side of Dissolution, on the side of Satan, and in rebellion against Christ.

In regard to this, there is no possible room for doubt. But then there comes in here another fact, a fact of the highest importance, and that is the fact that civilised Man is only a rebel, and only on Satan's side in respect of the present stage of Evolution. Man is diligently training himself and fitting himself to take Christ's side in the next stage of Evolution, in the final stage of Evolution, in the construction of the vast and permanent Edifice which has to be built by taking to pieces the present temporary buildings, the suns and stars so thickly strewn throughout Space, and putting the materials obtained from them together again in the construction of the one vast building which will complete the work of Evolution.

Man is diligently preparing himself for this last stage by the knowledge he is acquiring under the great German Chemists, with their wonderful skill in synthesis, the knowledge of ways

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of putting the materials in the suns and stars together to form old or new compounds.

Man is also diligently preparing for this last great stage by learning, under the Anglo-Saxon, how to capture and get control of the wild energies of Repulsion by the use of Machinery, and thereby compel these wild energies to co-operate with energies of Attraction in putting up the one vast building which will complete the work of Evolution. Thus we find that Man is altogether out of place here. Man's proper place is in that wonderful new world which is to come, and is, as we conclude, now due.

Man is out of place here. Man is an anthropoid ape by Nature, as Science shows us. And the home of the anthropoid ape, as Science shows us, is in the equatorial regions, and its food is not flesh but fruit and succulent roots and shoots. In the equatorial regions a warm, steamy climate prevails all the year round, year in and year out. Fruits and succulent roots and shoots are to be found all the year round. In those regions the anthropoid ape needs no clothing, needs no cooking, needs no shelter other than the shelter which the dense foliage supplies. There the anthropoid ape can live in a state of Nature, without making any provision

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for the winter of food or clothing or shelter or fuel. There the anthropoid ape needs no wealth.

But Man has left his ancestral home, has left the equatorial regions far behind, and wandered off northward and southward into regions where the climate is inclement and food is coarse, and the anthropoid ape can exist only as an exotic in warm houses with warm clothing, and on cooked food.

In these inclement regions Man is a transgressor and is out of place. Man in these inclement regions is obliged to burn up the products of Organic Evolution, the trees and the coal-beds, in order to warm his body and cook his food and fashion his weapons and implements.

Man, with his fires and his fire-arms, is in these inclement regions, is on the side of Dissolution, and on Satan's side, with Satan's training in the use of fire upon him, and if left to himself would have been hopelessly and helplessly in Satan's power, a helpless rebel against Organic Evolution and against Christ.

But Man is wanted, as we conclude, for better work than this, and has not been left in Satan's power, but has been rescued by Christ and trained for work in a better and higher stage of Evolution than this—for work in the

